

UNIVERSITY OF TARTU
DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

MEDIAL REGION ADPOSITIONS IN ENGLISH AND ESTONIAN:
A COGNITIVE GRAMMAR PERSPECTIVE

MA thesis

Jane Klavan
Supervisor: Lect. Reeli Torn-Leesik

Tartu 2008

PREFACE

The present thesis focuses on the semantics of spatial adpositions, a topic which holds a central position in modern linguistics. Taking into account the extensive research carried out in the domain of spatial language over the past few decades, the thesis is written from the perspective of cognitive and functional approaches to language.

The aim of the thesis is to describe the semantics of the English prepositions *between*, *among*, *amongst*, *amid*, *amidst*, *in the middle of*, *in the centre of* and the Estonian adpositions *vahel*, *vahele*, *vahelt*, *seas*, *sekka*, *seast*, *hulgas*, *hulka*, *hulgast*, *keskel*, *keskele*, *keskelt*, *keset*, applying the theory of Cognitive Grammar (Langacker 1987, 1990/2002, 1999, 2008). These adpositions are referred to as MEDIAL REGION adpositions, where the term MEDIAL REGION denotes a spatial scene where an object is located in a middle or intermediate position in relation to a single, dual, or multiple background objects. Although numerous cross-linguistic studies have been done on spatial adpositions from the cognitive linguistics perspective, not much has been said about such adpositions which express a spatial relationship between more than two objects.

The thesis consists of an introduction, three chapters, conclusion, and two appendices.

Introduction gives an overview of the general theoretical background of the thesis; that of cognitive linguistics and its main assumptions.

Chapter 1 sets the scene in presenting in greater detail the specific theoretical notions applied in the semantic analysis of the adpositions. Among other things, it discusses the issue of word classes and outlines the basic construal operations involved in spatial language. It also introduces Langacker's (1987, 1990/2002, 1999, 2008) network model which will be taken as an example when describing the semantics of English and Estonian MEDIAL REGION adpositions.

Chapter 2 presents the semantic analysis of English and Estonian MEDIAL REGION adpositions. These adpositions form a complex category, which consists of three sub-groups: MEDIAL, MEDIAL-PLURAL, MIDDLE. The English and Estonian MEDIAL REGION adpositions are described according to these groups. For each group a central scene is posited, which accounts for the different uses of these English and Estonian adpositions.

Chapter 3 reports the experimental findings related to the English and Estonian MEDIAL REGION adpositions. It tests a number of hypotheses posited during the semantic analysis.

The thesis ends with a **conclusion**.

I would like to thank, first and foremost, my thesis supervisor, Reeli Torn-Leesik. Without her guiding hand, I would never have found the way to linguistics. Most importantly, without her supervising I would never have started, and certainly never have finished writing my thesis. I am extremely grateful for her endless patience, something that I continually exhausted. I was not the easiest student to be supervised and I am deeply grateful that she did not give up on me.

I would also like to express my heartfelt gratitude to the members of the research project *Changes in the Grammatical System of Estonian: A Usage-Based Analysis of Language Change and its Reasons* (grant ETF6510, principal investigator Ilona Tragel) for the nice cooperation and for making me feel part of the Estonian cognitive linguists' in-crowd. I would especially like to thank Ilona Tragel and Tuomas Huumo for the productive "business lunches" and for really showing me what cognitive linguistics is all about. My deepest gratitude goes to Ann Veismann. Without our discussions, her useful comments and most importantly, her unweaving support, I could never have finished my thesis.

I am also immensely grateful to my colleagues at the Department of English for their kindness and continuous support.

TABLE OF CONTENTS

PREFACE.....	2
TABLE OF CONTENTS.....	4
INTRODUCTION	6
CHAPTER 1. SETTING THE SCENE	10
1.1 Spatial Language.....	10
1.1.1 Characteristics of Spatial Language.....	12
1.1.2 English Spatial Language Expressions	15
1.1.3 Estonian Spatial Language Expressions	16
1.2 The Category of Adpositions	16
1.2.1 The Category of Adpositions in English.....	19
1.2.2 The Category of Adpositions in Estonian.....	24
1.2.3 Word Classes in Cognitive Grammar	28
1.3 Cognitive Semantics Approach to Adpositions	34
1.3.1 Construal Operations	36
1.3.2 Polysemy, Prototypes and Radial Networks.....	42
1.3.3 Langacker's Network Model	44
CHAPTER 2. SEMANTIC ANALYSIS OF ENGLISH AND ESTONIAN MEDIAL REGION ADPOSITIONS	48
2.1 Introduction.....	48
2.2 Method of Analysis.....	49
2.2.1 The Data.....	51
2.3 The Category of MEDIAL REGION	54
2.3.1 Network of the Complex Category MEDIAL REGION.....	55
2.3.2 Image Schemas Related to MEDIAL REGION	58
2.3.3 Grammaticalization of MEDIAL REGION Adpositions	65
2.4 The MEDIAL Group: <i>between, vahel, vahele, vahelt</i>	70
2.5 The MEDIAL-PLURAL Group: <i>among, amongst, hulgas, hulka, hulgast, seas, sekka, seast</i>	89

2.6 The MIDDLE Group: <i>amid, amidst, in the middle of, in the centre of, keskel, keskele, keskelt, keset</i>	97
2.7 Discussion.....	107
CHAPTER 3. EXPERIMENTAL FINDINGS ON ENGLISH AND ESTONIAN	
MEDIAL REGION ADPOSITIONS	111
3.1 Introduction.....	111
3.2 English MEDIAL REGION Adpositions	113
3.2.1. Group 1: Native speakers.....	114
3.2.2. Group 2: Second language learners	121
3.2 Estonian MEDIAL REGION Adpositions	127
3.3 Summary	133
CONCLUSION.....	136
REFERENCES	140
Appendix 1. English and Estonian MEDIAL REGION Adpositions in the Corpus Sample...	147
Appendix 2. Experiment: Levels of Variables.....	150
Summary in Estonian.....	153

INTRODUCTION

Space and spatial language has intrigued linguists for many years and it has become one of the central topics in modern linguistics. Scholars working within the cognitive and functional linguistic framework have made great progress in describing the linguistic spatial systems in world's languages and each year further studies are carried out within this research domain. The present thesis hopes to contribute to the on-going research into how different languages express the various spatial relations that can hold between entities in the world.

The aim of the thesis is to provide a semantic description of the following English and Estonian adpositions: *between, among, amongst, amid, amidst, in the middle of, in the centre of, vahel, vahele, vahelt, seas, sekka, seast, hulgas, hulka, hulgast, keskel, keskele, keskelt*. These adpositions belong to the category of MEDIAL REGION, which denotes a spatial scene where an object is located in a middle or intermediate position in relation to a single, dual, or multiple background objects. These adpositions were selected on the semantic grounds; the basic criterion for the selection was that the form should be used primarily to express a medial spatial relation. The vast majority of research on adpositions in various languages has generally concentrated on those adpositions which locate an object in relation to only one other object. Instead, the objective of the present thesis is to investigate the semantics of adpositions with multiple background objects. In our everyday life we encounter many situations where an object is located or needs to be identified among two or more background objects; humans are also social beings and the above-mentioned adpositions are used a lot to describe the various relationships between them and how they interact with the world around them.

The present thesis takes a semasiological approach, where the perspective goes from language to the world – I take these MEDIAL REGION adpositions and look what kinds of situations can be appropriately designated by them. It should be stressed that these MEDIAL REGION adpositions are not the only ways either English or Estonian can express medial location. There are numerous other ways that will come up if the issue were approached from the onomasiological perspective.

The theoretical framework applied in the thesis is **Cognitive Grammar** (Langacker 1987, 1990/2002, 1999, 2008), a subfield of the wider movement known as **cognitive linguistics**, which emerged around the 1970s–1980s as a reaction against formalist models. Cognitive Grammar as a linguistic theory has been described as “intuitively natural, psychologically plausible, and empirically viable” (Langacker 2008: 3). Research work in Cognitive Grammar proceeds from the foundational premise that **grammar is meaningful** and that the elements of grammar, like lexical items, have meaning in their own right; syntax and semantics are claimed to be inseparable. Grammar is taken to be **symbolic** in nature, i.e. “lexicon and grammar form a gradation consisting solely in assemblies of symbolic structures” (Langacker 2008: 5). The idea that language is shaped and constrained by the functions it serves, is also influential within Cognitive Grammar.

Cognitive Grammar is closely related to other strands of cognitive linguistics, like cognitive semantics (Talmy 2000), construction grammar (Goldberg 1995, 2006, Croft 2001), metaphor theory (Lakoff and Johnson 1980, 1999, Lakoff 1987, Johnson 1987), blends and mental spaces (Fauconnier and Sweetser 1996, Fauconnier and Turner 2002). Both grammaticalization studies (Bybee, Perkins, Pagliuca 1994, Heine and Kuteva 2002, Hopper and Traugott 2003) and universal-typological investigations have also proved useful in Cognitive Grammar. All of these approaches share the foundational assumption that language is **not** an independent or **autonomous** mental faculty, but part of **general cognition**. In Estonia, the framework of cognitive linguistics has been used by, for example, Huumo (2004), Kährik (2002), Tragel (2003), Vainik (1995), Veismann (2004, 2006).¹ There are also many studies on various Estonian grammatical phenomena which proceed from the perspective of grammaticalization theory (e.g. Habicht 2000, 2001a, 2001b, Metslang 2001, Ojutkangas 2001). The present thesis employs, in addition to Cognitive Grammar, cognitive semantics and grammaticalization theory.

The reason why prepositions have received special focus as research topics within the framework of Cognitive Grammar derives from the fact that prepositions as spatial language expressions are highly representative of the nature of linguistic meaning in

¹ See also the articles in the edited volume of *Papers in Estonian Cognitive Linguistics* (Tragel 2001). A survey in Estonian of Cognitive Grammar and of functional approaches to linguistics more generally can be found in Õim and Tragel (2007) and Tragel (2002).

general (Zelinsky-Wibbelt 1993: 4). Linguists concerned with language phenomena at the more grammatical end of the grammar-lexicon continuum must also face the issues a semanticist has to deal with. Traditionally, when describing word meaning, a distinction is made between **monosemy**, **polysemy** and **homonymy**. If one looks at any introductory textbooks on semantics, these terms seem easy to define: a lexical item is monosemous when it has only one meaning, polysemous if it has many related meanings, and homonymous if it has the same spelling and/or pronunciation as another lexical item, but has a different meaning. Nevertheless, this seemingly straightforward categorization is bedevilled with puzzles which have not proved easy to solve; for example, there are questions like how to distinguish between monosemy and polysemy, between polysemy and homonymy, and what is meant by “related meanings”. In cognitive linguistics, and especially cognitive semantics, considerable theoretical and empirical work has been carried out to answer these questions. But regardless of the advances made, many issues still remain. The present thesis adopts the general assumption within cognitive linguistics that linguistic items with any considerable frequency are polysemous.

Cognitive linguistics rejects the objectivist account of meaning (Lakoff 1987, Johnson 1987), which implies that meaning can be described in terms of objective language-world relationships. Instead, language is a representation of underlying conceptual structures and processes, which are grounded in the human body and in our experience of the world around us. This means that all **conceptualization**, i.e. our mental experience, is based on our physical experience gained from our physical functioning in a spatial environment (Zelinsky-Wibbelt 1993: 4). Meaning is said to be **embodied** and based on imaginative structures (e.g. image schemas) of understanding. Cognitive Grammar equates meaning with conceptualization. Many cognitive linguists also share the assumption that linguistic categorisation reflects mental categorisation. An important finding is that **categorisation** is not criterial, but shows **prototypicality** effects (Rosch 1973, Rosch et al. 1975, 1976). The prototype-based model of categorisation recognises that category membership is a gradient phenomenon – some members are more central or prototypical than others.

It is from these foundational assumptions about language and meaning that this thesis proceeds. As the empirical part of the thesis relies on both Cognitive Grammar and

cognitive semantics, a more detailed discussion of the central concepts and models posited is presented in chapter 1. These notions are used in the semantic description of MEDIAL REGION adpositions in English and Estonian. The thesis takes a comparative stance and looks for cross-linguistic similarities and differences. The thesis hopes to contribute to the overall stock of Cognitive Grammar studies on adpositions and the results form a basis for further research. It is also hoped that the results can be used in applied linguistics for the purposes of language teaching and learning. The results and data may also be useful for lexicographers when compiling new general and specialized dictionaries.

CHAPTER 1. SETTING THE SCENE

The aim of this introductory chapter is to set the scene for the semantic analysis of English and Estonian MEDIAL REGION adpositions. The different sections in this chapter serve a number of functions. Section 1.1 gives an overview of why spatial language studies are topical in modern linguistics. It presents some of the main characteristics of spatial language and discusses the key concepts used in cognitive linguistic spatial studies, and which are employed also in the present thesis.

Section 1.2 discusses the category of adpositions in English and Estonian, as this is one of the basic means how these languages express various spatial relations. The issue of word classes is central to the discussion – after looking at the ways descriptive grammars have treated both English prepositions and Estonian adpositions, I will present the Cognitive Grammar approach to word classes. While section 1.2 outlines the formal morpho-syntactic characteristics of adpositions, then section 1.3 presents an overview of the cognitive semantic approach to the study of adpositions. The first part of section 1.3 outlines the construal operations employed in spatial language, including in the expression of MEDIAL REGION. The second part discusses some of the possible models for analysing adpositions from a cognitive semantic perspective. It is argued that the Langackerian network model is the most useful one. The main aim of sections 1.1 and 1.3 is to describe and define some of the key concepts that are employed in the semantic analysis of English and Estonian MEDIAL REGION adpositions in chapter 2.

1.1 Spatial Language

Locating and identifying things in space and expressing our spatial experience are one of the most basic characteristics about human communication (Miller and Johnson-Laird 1976:410). Almost 10 years ago Bloom and his colleagues (1999) expected that this “fascinating subject” of spatial language would receive increased attention in the years ahead. Taking into consideration the sheer number of edited books, monographs, articles, and conferences dedicated to this subject, it can at this point be confirmed that their expectation has come true.

There are many reasons why spatial language has become “popular” and a much-researched domain. One of the most important reasons might be that a new philosophical climate surfaced in linguistics in the second half of the 1970s (Zelinsky-Wibbelt 1993: 2). Eleanor Rosch’s and her colleagues’ (1973, 1975, 1976) psychological experiments changed the fundamental beliefs about language of many linguists. The foundational beliefs that changed the most pertained to linguistic meaning. Thus, a completely different trend emerged called **cognitive linguistics**. This approach in linguistics is continually growing and gaining wider and wider support around the world. Its basic ideas were contradictory to the still dominant linguistic paradigms of autonomous linguistics, e.g. generativism. The two main subdisciplines of cognitive linguistics, cognitive semantics and Cognitive Grammar “rest upon an essentially visuo-spatial conception of meaning and conceptualization, in which symbolic structures are derived from embodied constraints upon human perception and agency in a spatial field” (Sinha 1995a: 7). These kinds of foundational assumptions about the spatial or “localist” conception of grammaticalized meaning (Sinha 1995a) are the reason why analyses of spatial meaning are at the forefront of modern linguistics.

Within cognitive linguistics the domain of SPACE is taken to be somewhat more basic to humans than other domains (Sinha 1995a, 1995b, Talmy 2000, Zlatev 2007). Spatial language expressions are frequently used to express other more abstract domains like time, possession, and social organization. The conceptual metaphor TIME IS SPACE is one of the most ubiquitous research topics within Cognitive Linguistics literature (e.g. Boroditsky 2001, Lakoff and Johnson 1980, 1999). This has led Pütz and Dirven to claim that “space is the heart of all conceptualization” (1996: xi). A vast number of other researchers have turned to spatial language as the key to the human conceptual categorization in general. Although consistent correspondences or mappings have been found between SPACE and more abstract domains such as TIME, this issue is still controversial. Other possible explanations have been given to the supposed primacy of space, such as the historical processes of grammaticalization (Zlatev 2007: 319).

Many cognitive linguists and other cognitive scientists regard the domain of SPACE as a fruitful domain to look for linguistic universals and investigate linguistic relativity issues (e.g. Bowerman 1996, Regier 1996, Pederson et al. 1998, Li and Gleitman 2002,

Talmy 2002, Levinson 2003). According to Filipovic Kleiner (2004: 2089), within the spatial domain, modern linguistics has seen a kind of “resurgence of interest in the Whorfian hypothesis”. As already pointed out, space is something basic to human experience and directly linked to universally shared perceptual mechanisms. It has been claimed that since “all people share the same faculties of perception, we all perceive space in the same way” (Vandeloise 1991: 14). On the one hand then, spatial language should manifest possible linguistic and cognitive universals, and on the other hand numerous studies have shown the possible cross-linguistic and cross-cultural cognitive differences (Sinha 1995a: 7).²

Since the nature of space is multidimensional, it can be approached from a vast number of aspects. There are many interesting questions asked and addressed by researchers from various disciplines. Space and spatial language is an issue that has attracted truly interdisciplinary attention; indeed, interdisciplinary co-operation is a vital part of modern scientific research. Much debating and researching on space is done across various scientific fields, including linguistics, anthropology, psychology, neuroscience, philosophy, artificial intelligence, robotics, and geography (Bloom et al. 1999, Hickmann and Robert 2006). The various disciplines have provided “a much needed synthesis across these diverse” disciplines (Bloom et al. 1999).

1.1.1 Characteristics of Spatial Language

It is possible to draw a list of basic characteristics of spatial language based on the numerous studies conducted. First of all, it has been noted that spatial relations encoded by, for example, spatial prepositions tend to be **non-metric** and are relatively **coarse** (Landau and Jackendoff 1993, Svorou 1994, Talmy 2000). Another important characteristic is that objects are located in a **relativistic way**, i.e. with respect to other objects. Another salient fact about spatial expressions is that there seems to be a **limited number** of words that are clearly devoted to expressing spatial relations in the world languages. Landau and Jackendoff (1993) have pointed out that in comparison to the number of names for different kinds of objects, there seems to be surprisingly few prepositions in English (about 80 to

² For an example of an interesting discussion concerning linguistic relativity, the interconnections and possible causal relations between space and conceptualization, see the discussions in Pederson et al. (1998), Li and Gleitman (2002), and Levinson et al. (2002).

100). This limited number of prepositions has been taken as evidence that “precise location is not encoded in any individual term” (Landau and Jackendoff 1993: 224).

It is commonly claimed that spatial meaning is expressed by the members of closed classes (Svorou 1994, Talmy 2000). Although authors like Talmy and Svorou (cited in Zlatev 2007: 2) acknowledge that sometimes open classes, such as nouns and verbs, also participate in expressing spatial meaning, grammatical elements are claimed to have priority. This view is however objected by Sinha and Kuteva (1995: 168), who argue that: “An adequate analysis requires the abandonment of the localist approach and the analysis of how spatial relational meaning is syntagmatically distributed over simultaneous selections from closed and open form classes”. However, the focus on prepositions in English spatial language studies is only natural, because in English this is the basic way how various spatial relations are expressed.

Zlatev (2007: 327) has put forward **a basic set of spatial semantic concepts** that are present in almost all descriptions of spatial semantics: trajector, landmark, frame of reference, region, path, direction, motion.³ The present thesis makes special use of five of them: trajector, landmark, region, direction, and motion.

Trajector and **landmark** are the two most fundamental notions in cognitive linguistic analyses of spatial language. According to Langacker (2008: 70), there are two prominent participants in a relational expression: the most prominent participant is called the trajector (TR) and the second participant is the landmark (LM).⁴ Trajector is the entity whose location or motion is of relevance; landmark is the reference entity in relation to which the location or the motion of the trajector is specified. Trajector may be static or dynamic, a person or an object, or even a whole event (Zlatev 2007: 327). The following illustrative examples are taken from Zlatev (2007: 327; the trajector has been underlined):

1. a) She is at school. = static
- b) She went to school. = dynamic
- c) The book is on the table. = object
- d) She is playing in her room. = whole event

³ Of course, as in any scientific field, the exact terminology varies; here, the importance is on the general conceptual entities denoted by these terms.

⁴ When these notions are used in the text, they are spelled out; in figures, they are represented by the corresponding abbreviations, tr and lm.

The third key notion is **region**. It has been suggested that languages do not relate the trajector and landmark in a spatial expression directly, but through a “region” (Landau and Jackendoff 1993, Svorou 1994, Zlatev 2007). Although the concept of region has been mentioned in several theories of spatial relations (see also Langacker 1987: 198), it was Svorou (1994) who fully developed this notion and gave it conceptual priority. In essence, the term region refers to “an area adjacent to a [landmark] (or part of it) in which a specific spatial description is valid” (Svorou 1994: 13). The concept of region is claimed to be especially relevant within a theory of spatial relations which assumes a relativistic idea of space, i.e. space is understood by the relations that exist between objects, and where knowledge about the size, mobility, and interactional and functional attributes of entities play also role (Svorou 1994: 15). Zlatev also claims that “most, if not all, of the regions that are relevant for spatial semantics correspond to various types of “image schemas” such as CONTAINMENT and SUPPORT” (2007: 330). The present thesis studies some of the ways how **MEDIAL REGION** is expressed in English and Estonian. As a working definition, this term denotes a spatial scene where the trajector is located in a middle or intermediate position in relation to a single, dual, or multiple landmarks.

The fourth crucial spatial language concept is that of **direction**. A directional adposition is here taken to express dynamic spatial relations between a trajector and a landmark (Svorou 1994: 111). **Motion** and directionality are conceptually very closely intertwined – directionality is inherent in movement (Svorou 1994: 25). In Estonian, there are separate adpositions or adposition forms for expressing direction: the *lative* and the *separative* form. These correspond to Svorou’s definitions of **ALLATIVE** and **ABLATIVE** direction respectively. **ALLATIVE direction** is where the landmark is treated as a destination and the trajector is treated as moving towards the landmark (Svorou 1994: 237). **ABLATIVE direction** is where the landmark is treated as a point of departure and the trajector is treated as moving away from the landmark (Svorou 1994: 237). Other terms used when talking about direction and motion are source and goal.

1.1.2 English Spatial Language Expressions

In English, adjuncts and complements expressing location and change of location in space are very frequent and varied in form and meaning (Huddleston and Pullum 2002: 680). The most elementary case is simple **location** itself. When talking about how English expresses change of location or motion, Huddleston and Pullum (2002: 680) use the terms **source** (starting-point), **goal** (endpoint), and **path** (intermediate location). The following example sentences (2a-e) taken from Huddleston and Pullum (2002: 680) illustrate simple location and the various combinatorial possibilities for these notions:

- | | | |
|----|-------------------------------------------------------------------------|------------------------|
| 2. | a) <i>George remained <u>at home</u>.</i> | [location] |
| | b) <i>Don't travel <u>via London</u> if you can avoid it.</i> | [path] |
| | c) <i>I drove <u>from school through the tunnel to the station</u>.</i> | [source + path + goal] |
| | d) <i>John ran <u>down the stairs into the kitchen</u>.</i> | [path + goal] |
| | e) <i>She has come <u>from London via Singapore</u>.</i> | [source + path] |

English location elements can be complements or adjuncts: *The stew is in the oven* (complement), *We had breakfast in the kitchen* (adjunct); elements having to do with change of location are normally complements and they are licensed by verbs expressing motion, including causative verbs of movement, e.g. *put*, *send* (Huddleston and Pullum 2002: 680-684). According to Landau and Jackendoff (1993: 224) in the canonical English expression of a spatial relation, trajector and landmark are encoded as noun phrases and the relationship between them is encoded as a spatial preposition.

It is characteristic of English is that the specific goal marker *to* is often omissible, while the source marker (e.g. *from*, *off*, *away*, *out of*) is usually expressed, as demonstrated in the following examples taken from Huddleston and Pullum (2002: 686):

- | | | | |
|----|---------------------------------------------------|--|-----------------------------------------|
| 3. | SOURCE | | GOAL |
| | i. a. <u>Where</u> did she come <u>from</u> ? | | b. <u>Where</u> did she go (to)? |
| | ii. a. She's travelling <u>from here</u> by car. | | b. She's travelling <u>here</u> by car. |
| | iii. a. He emerged <u>from under the bridge</u> . | | b. He swam <u>under the bridge</u> . |
| | iv. a. He came <u>out of the room</u> . | | b. He went <u>in(to)</u> the room. |

Such sentences as *He swam under the bridge* are claimed to be ambiguous between the goal reading (He wasn't under the bridge to start with but was at the end of the event described) and the location reading (He was swimming around under the bridge) (Huddleston and Pullum 2002: 686). This ambiguity also applies to the English MEDIAL REGION adpositions. Only *in the middle of* and *in the centre of* are used together with the

goal marker *to* (*to the middle of, to the centre of*); *between, among, amongst, amid, amidst* do not normally take the goal marker and can be used both for location and for goal.

1.1.3 Estonian Spatial Language Expressions

In Estonian, location and change of location is expressed by adpositions, adverbs, and nouns declined in terminative, interior and exterior locative cases (Erelt et al. 1993: 71). In Estonian grammar, the terms corresponding to Svorou's ALLATIVE and ABLATIVE direction are the **lative** or goal adverbial and **separative** or source adverbial (Erelt et al. 1993: 71–75). The separative and lative adverbials of place both modify the same verbs of motion. In Estonian, these two adverbials often occur together; moreover, the expression of goal with such verbs is considered more important than the expression of source (Erelt et al. 1993: 75). Without the lative adverbial of place, the separative adverbial occurs only when it is part of a phrasal verb or an idiomatic expression (*ibid.*). Similarly to the many other Estonian adpositions expressing spatial relations, MEDIAL REGION adpositions are also divided into the lative, locative and separative members.

1.2 The Category of Adpositions

This section gives an overview of the category of adpositions in English and Estonian. It will present a morpho-syntactic description of this word class; but before doing that, the section discusses the general concept of *word class*⁵ in modern linguistics. It will then continue to consider the problems that arise in trying to provide clear-cut definitions for such linguistic categories as, for example, adpositions and adverbs. After having highlighted some of the problems with traditional grammars' account of adpositions, it will be argued that Cognitive Grammar provides for the purposes of the present thesis a more suitable alternative.

Word classes are one of the basic linguistic categories. Determining and describing word classes is considered one of the most important steps in studying languages. Human beings excel at categorisation, it is one of their basic cognitive abilities and it is also reflected in the way we describe and analyse language. Linguistics abounds with different grammatical categories. Still, distinguishing one category from another is not always easy.

⁵ In the present thesis the terms *word class* and *category* are taken to mean one and the same thing.

This is particularly evident with word classes, where demarcation of one class from another is often not clear. There are grammatical categories with fuzzy boundaries, prototypical members and disputable borderline cases.

It has been assumed that all languages make a distinction between open and closed word classes (Schachter and Shopen 2007, Lehmann 2002, Talmy 1983/2000). **Open classes** are those “whose membership is in principle unlimited, varying from time to time and between one speaker and another” (Schachter and Shopen 2007: 3); **closed classes** are those that “contain a fixed and usually small number of member words, which are [essentially] the same for all the speakers of the language, or the dialect” (Schachter and Shopen 2007: 3). *Nouns, verbs, adjectives, adverbs* are generally taken to belong to the open class, while as *quantifiers, classifiers, articles, case markers, discourse markers, and adpositions* are considered to belong to the closed class.

All languages are claimed to contain open classes, but the universal status of closed classes is questionable (Schachter and Shopen 2007: 3). Furthermore, it is interesting to note that languages differ more in the closed class distinctions they make than in the open class distinctions (Schachter and Shopen 2007: 22). The English and Estonian adpositions are taken to belong to the closed class owing to the size of the category and the fact that new members are a product not of derivation from other elements, but rather of evolution or grammaticalization processes (Lehmann 2002: 119, Svorou 1994: 31).

Although such a basic distinction between open and closed classes is no doubt useful, caution should be taken with positing classes with strict boundaries. Some scholars, who study specific semantic domains, including space, have even challenged this basic distinction (Ameka and Levinson 2007). Lehmann (2002: 119) also emphasises that the distinction between the open and closed word classes is gradual. Furthermore, whether a word already belongs to the closed class of adpositions or still in the open class depends on the degree of grammaticality.

The existence of the class of **adpositions** is in general accepted, although its universal status is doubtful. Adpositions can be defined as “free morphological forms that appear in languages primarily in a construction with noun phrases, either preposed (**prepositions**) or postposed (**postpositions**) to indicate case and case-like functions such as

space, time, causality, or instrument” (Svorou 2007: 726, emphasis mine). However, problems arise as soon as it is attempted to define the category, establish a list of its members, and mark the boundaries (Dryer 2007; for Estonian see Grünthal 2003, for English Navarro-Ferrando 1998). Different linguists adopt different criteria and the descriptions can thus depart from each other significantly. It has also been pointed out that to accept “adposition” as a well-defined universal category would be wrong, since functionally equivalent terms to *adposition* like *co-verb*, *verbid*, *relational nouns* have been proposed for typologically different languages that do not quite fulfil all the requirements for an adposition, but do participate in constructions where they play the role of an adposition (Svorou 2007: 727).

One of the interesting characteristics about English and Estonian MEDIAL REGION adpositions is that they can belong to various grammatical categories. Frequently, one and the same linguistic item can be realized as an adposition and as an adverb. This tendency is typical not only of the MEDIAL REGION adpositions in these languages, but of spatial adpositions in general. This leads to problems in determining the word class of spatial grammatical words, as pointed out by, e.g. Dryer (2007) and Veismann (2008). Although the present thesis mainly focuses on linguistic elements that belong to the grammatical category termed *adpositions*, in the semantic analysis, I have also looked at the use of these linguistic items as *adverbs* and *particles*⁶. The question of how the membership of a lexical unit in a certain word class influences its meaning is of course interesting, but this issue is outside the scope of the present thesis. Similarly to Veismann (2008), I agree with O’Dowd (1998) who has shown that the realization of these three word classes depends on discourse-functional factors.

In the following two sections a detailed description of the adposition category in English and Estonian is given, with special attention devoted to the definition and syntactic characterization of this grammatical category in both languages.

⁶ Estonian grammatical tradition makes a distinction between *independent adverbs* and *affixal adverbs* (Erelt et al. 1993, 1995). The present thesis uses the term **particle** to talk about both the English and Estonian adverb/adposition-like elements in phrasal verb constructions.

1.2.1 The Category of Adpositions in English

One of the primary ways in which languages differ from one another is in the relative ordering of subject (S), verb (V), and object (O), i.e. in their word order (Dryer 2007: 61). It has been pointed out that if one knows the relative ordering of V and O in a language, then one can also predict the ordering of other constituents, including adpositions and nouns (Whaley 1997: 86). In English, the typical word order is SVO, and thus we can predict that it has the ordering “adposition + noun” (Lehmann 1973, 1978, cited in Whaley 1997). Though the vast majority of adpositions in English are indeed **prepositions**, it has a few words that can be analysed as postpositions, e.g. *ago* and *notwithstanding* (Dryer 2007: 75).

According to the general definition of a preposition in traditional grammar, it is a word that normally precedes a noun or pronoun and which expresses the latter’s relation to another word (Huddleston and Pullum 2002: 598). In most cases, there is also the requirement that all prepositions take NP complements. A novel approach is taken by Huddleston and Pullum, who have adopted, in their own words, “a significantly different conception of prepositions” (2002: 598). As they themselves constantly stress, their significantly different conception is that they take prepositions to be heads of phrases; this leads to a considerable increase in the set of words categorised as prepositions (Huddleston and Pullum 2002: 598). However, the novelty does not lie in taking prepositions to be heads of phrases, but in that they expand the context where they give prepositions head-status. They provide the following definition, which I also concur with:

PREPOSITION: a relatively closed grammatically distinct class of words whose most central members characteristically express spatial relations or serve to mark various syntactic functions and semantic roles. (Huddleston and Pullum 2002: 603).

It has been pointed out that the class of prepositions is similar to other word classes and constructions, in particular to adverbs, conjunctions, verbs, and adjectives (Quirk et al. 1985: 658, Huddleston and Pullum 2002: 600). From these similarities, the most relevant one for this work is that between prepositions and adverbs. English prepositions are items which are often identical with and semantically similar to adverbs. Quirk et al. have proposed the term **prepositional adverb** to talk about “a particle which is formally

identical to or related to a preposition, and which often behaves like a preposition with ellipsed complement” (1985: 713). The following examples are taken from Quirk et al. (1985: 713):

4. *A car drove past the door.* = *past* is a preposition
 A car drove past. = *past* is a prepositional adverb

Although Quirk et al. (1985) use the term *prepositional adverb*, they regard this grammatical category as distinct from that of prepositions. In this respect, a different approach is taken by Huddleston and Pullum (2002: 598), who have included a subset of traditional adverbs in the preposition category. They point out that “the traditional account does not allow a preposition without a complement, but within a framework where prepositions function as head of phrases /.../ there is no principled basis for imposing such a condition” (Huddleston and Pullum 2002: 600). Thus, such words like *downstairs*, which never take complements are also included in the preposition category.

Still, Huddleston and Pullum (2002: 604) recognise that the prototypical preposition takes an NP as complement. This is considered an important distinguishing property of prepositions. Below is a list of functions of prepositional phrases, taken from Huddleston and Pullum (2002: 646):

- | | |
|--------------------------------------------------------------------|-----------------------------------|
| i. I gave the key <u>to Sue</u> . | = complement in clause |
| ii. She put the key <u>in her bag</u> . | = (goal) complement in clause |
| iii. They are <u>under the table</u> . | = (locative) complement in clause |
| iv. She had slept <u>in the attic</u> . | = adjunct in clause |
| v. Where’s [the key <u>to the attic</u>] | = complement in NP |
| vi. They bought [a house <u>with a flat roof</u>] | = modifier in NP |
| vii. There are now [fewer <u>than a hundred</u>] seats left. | = complement in DP |
| viii. [Only one <u>in twenty</u>] candidates were shortlisted. | = modifier in DP |
| ix. They are still [very keen <u>on surfing</u>] | = complement in AdjP |
| x. He was [tired <u>to the point of exhaustion</u>] | = modifier in AdjP |
| xi. He likes to do things [differently <u>from everyone else</u>] | = complement in AdvP |
| xii. I’ll be seeing her [later <u>in the week</u>] | = modifier in AdvP |

Within the category of English prepositions, a number of subdivisions can be made. For example, a distinction has been drawn between **central** and **marginal** prepositions (Quirk et al. 1985, Huddleston and Pullum 2002). Most of the central prepositions in English (or any language) have meanings that concern either spatial location, or change of

location, or extension of those notions into the dimension of time, or notions derived more broadly from them through metaphor (Huddleston and Pullum 2002: 647). Quirk et al. (1985) make a further distinction between **simple** and **complex** prepositions. The boundary between these types of prepositions is an uncertain one. The English MEDIAL REGION prepositions *between*, *among*, *amongst*, *amid*, *amidst* belong to the central and simple subclasses, while *as in the centre of* and *in the middle of* are taken to be complex prepositions.

Counting the prepositions presented under the respective categories of simple and complex prepositions in Quirk et al. (1985), one can get a rough idea of the possible size of the category of prepositions in English. Quirk et al. (1985: 665–671) have given around 90 simple (70 central and 20 marginal) prepositions plus about another 90 complex prepositions (40 two-word sequences and 50 three-word sequences). However, it is important to emphasise that this is only an approximate number⁷; there are issues that complicate the determination of the actual size. One such complicating issue is the “**gradience**” between complex prepositions and free noun-phrase sequences. Quirk et al. (1985: 671) talk about a scale of “cohesiveness” that runs from a sequence which behaves like a simple preposition, to one which behaves like a set of grammatically separate units, e.g. *in spite of (weather)* and *on the shelf by (the door)*.

According to Huddleston and Pullum (2002: 618) **complex prepositions** are “expressions consisting of a preposition followed by a noun (sometimes preceded by *the* or *a*), followed in turn by a second preposition and an NP (or gerund-participial)”. Such sequences can be schematically presented as:

Prep₁ (Article) N₁ Prep₂ X

The most fossilised of these sequences like, e.g. *by dint of*, should be distinguished from free expressions like *She put it on the photo of her son*. However, modern descriptive grammars have tended to extend the category of complex prepositions, and there is accordingly some variation in dictionary practice, depending on how much they have taken into account such work (Huddleston and Pullum 2002: 616).

⁷ Cf. Landau and Jackendoff (1993: 224) who have proposed that there are around 80 to 100 prepositions in English, but their list did not include the complex prepositions.

The distinction between complex prepositions and free expressions is also relevant in connection with English MEDIAL REGION prepositions. Although the present thesis has included such sequences as *in the centre of* and *in the middle of* in the set of complex prepositions, neither Quirk et al. (1985) nor Huddleston and Pullum (2002) explicitly include them in their lists of complex prepositions⁸. The *Oxford English Dictionary*⁹ (OED) also does not have an independent entry for these expressions, but discusses them under the main entries of “centre” and “middle” respectively. However, the present thesis takes them to be complex prepositions because they do not permit the full range of syntactic manipulations that apply for free expressions.

Table 1 presents the syntactic manipulations given by Huddleston and Pullum (2002: 619) that are used in determining the syntactic status of fossilised elements, i.e. complex prepositions, and free expressions. It presents the comparison of the syntactic manipulations allowed by the free expression *She put it [on the photo of her son]*, the fossilised expression *She achieved this [by dint of hard work]* and the proposed complex prepositions *She put it [in the centre of the floor]* and *She put it [in the middle of the wall]*.

Table 1. Comparison of the syntactic manipulations allowed¹⁰ by free expressions and fossilised complex prepositions¹¹

Syntactic manipulation	free expression	fossilised expression	complex preposition	
	on the photo of her son	by dint of hard work	in the centre of the floor	in the middle of the wall
occurrence without Prep ₁	<i>She has lost [the photo of her son].</i>	*[Dint of hard work] achieves wonders.	<i>Near [the centre of the floor] were found three large stones.</i>	<i>When using this method,[the middle of the wall] is generally filled with earth.</i>
omission of Prep ₂ + X	<i>She put it [on the photo].</i>	* <i>She achieved this [by dint].</i>	<i>She put it [in the centre].</i>	<i>She put it [in the middle].</i>

⁸ It is worth noting that although Quirk et al. (1985) do not explicitly mention the preposition *in the middle of* under the category of complex prepositions, it can still be concluded from a different context that they actually do take this lexical unit to be a (complex) preposition. *In the middle of* is used as one of the example prepositions in describing the possible modification of prepositions: *The dog was lying right <in the middle of> the floor* (Quirk et al. 1985: 713).

⁹ I have used the online version of the 20-volume Second Edition of the OED: <http://dictionary.oed.com> (it can be accessed for free through Tartu University Library's server).

¹⁰ The symbol * indicates that a given manipulation is disallowed, the symbol ? indicates the questionable acceptability.

¹¹ The data for the free expression *on the photo of her son* and the fossilised expression *by dint of hard work* are taken from Huddleston and Pullum (2002: 619). The BNC and the internet were used in deciding on the acceptability of corresponding manipulations with *in the centre of* and *in the middle of*.

modification of N ₁	<i>She put it [on the crumpled photo of her son].</i>	<i>*She achieved this [by pure dint of hard work].</i>	<i>She put it [in the very centre of the floor].</i>	<i>She put it [in the very middle of the wall].</i>
number change in N ₁	<i>She put them [on the photos of her son].</i>	<i>*She achieved this [by dints of hard work].</i>	<i>*She put it [in the centres of the floor].</i>	<i>*She put it [in the middles of the wall].</i>
determiner change	<i>She put it [on this photo of her son].</i>	<i>*She achieved this [by the dint of hard work].</i>	<i>*She put it [in this centre of the floor].</i>	<i>*She put it [in this middle of the wall].</i>
genitive alternation	<i>She put it [on her son's photo].</i>	<i>*She achieved this [by hard work's dint].</i>	<i>?She put it [in the floor's centre].</i>	<i>?She put it [in the wall's middle].</i>
coordination of N ₁	<i>She put it [on the photos and drawings of her son].</i>	<i>*She achieved this [by dint and way of hard work].</i>	<i>*She put it [in the centre and top of the floor].</i>	<i>*She put it [in the middle and top of the wall].</i>
coordination of Prep ₂ + X	<i>She put it [on the photos of her son and of Kim].</i>	<i>*She achieved this [by dint of hard work and of sheer persistence].</i>	<i>*She put it [in the centre of the floor and of ceiling].</i>	<i>*She put it [in the middle of the wall and of the floor].</i>
fronting of Prep ₂ + X	<i>*the son <u>of whom</u> she put it [on the photo]</i>	<i>*the hard work <u>of which</u> she achieved this [by dint]</i>	<i>*the floor <u>of which</u> she put it [in the centre]</i>	<i>*the wall <u>of which</u> she put it [in the middle]</i>

From this comparative table it can be concluded that although *in the middle of* and *in the centre of* are not completely fossilized, they still do not allow the majority of the manipulations that free expressions do. Thus, yet again we cannot draw distinct boundaries for the category of complex prepositions. Rather, we have another instance of items that lie between the two extremes, but because *in the middle of* and *in the centre of* behave more like *by dint of* than *on the photo of*, they are taken to be complex prepositions in the present work. In addition to the syntactic manipulations given in Huddleston and Pullum (2002), Quirk et al. (1985: 671) also mention another syntactic manipulation that is relevant in the discussion of *in the middle of* and *in the centre of*. Namely, they point out (Quirk et al. 1985: 671) that an indicator of an expression's syntactic separateness is the fact that Prep₁ can be varied. Both *in the middle of* and *in the centre of* can take the forms of *at the middle of*, *at the centre of*, *to the middle of*, *to the centre of*, *from the middle of*, *from the centre of*. However, the complex prepositions with *in* as Prep₁ are more frequent than those with *at*: there are 2846 instances of *in the middle of* vs. 18 instances of *at the middle of*, and 1057 instances of *in the centre of* vs. 749 instances of *at the centre of*. It is interesting that *in* vs. *at the centre of* shows only marginal preference for *in* as Prep₁. This might point to the conclusion that *in the middle of* is more fossilised than *in the centre of*.

To conclude, it can be claimed that the category of adpositions in English is not an uncontroversial one. Recent approaches (Huddleston and Pullum 2002) have taken a

somewhat novel and different approach in describing adpositions. Still, in the present thesis, the Cognitive Grammar description of word classes is found most appropriate. Section 1.2.3 discusses how Cognitive Grammar approach differs from the more traditional approaches. In addition to the problems of distinguishing between prepositions and prepositional adverbs, a relevant problem for the present thesis involves the distinction between free expressions and complex prepositions. Following the syntactic manipulations presented in Huddleston and Pullum (2002: 619), it was concluded that *in the centre of* and *in the middle of* are complex prepositions.

1.2.2 The Category of Adpositions in Estonian

As pointed out at the beginning of the previous subsection, one of the primary ways in which languages differ from one another is in the relative ordering of subject (S), verb (V), and object (O) (Dryer 2007: 61). The Estonian language, like other Finnic languages, has presumably changed from a historical SOV to SVO and is predominantly postpositional (Grünthal 2003: 45). In fact, the Estonian data set is interesting in this respect that the Estonian category of adpositions has a typologically “double character” (Grünthal 2003: 45), i.e. there are both prepositions and postpositions in Estonian. Mixed adpositional systems are exceptional in the world’s languages (Dryer 2005, Grünthal 2003: 45). However, Grünthal (2003:45) has pointed out that the number of prepositions is rather small and does not exceed 20-25% of all adpositions. The majority of Estonian MEDIAL REGION adpositions studied in the present thesis are **postpositions** (*hulgas, keskel, seas, vahel*), but there is also one **preposition** (*keset*) in the dataset. Thus, attention is given below to the morpho-syntactic characteristics of both postpositional and prepositional phrases in Estonian. Some comments will also be made about the morpho-syntactic differences between these two adpositional phrases.

A number of Estonian linguists have pointed out that the boundaries between Estonian word classes are not always clear-cut (Karelson 1972: 71, Veski 1982: 6, Erelt et al. 1995: 38, Grünthal 2003: 46, Villup 1969: 8, Veismann 2008: 335). Karelson (1972: 71) has indicated that the fuzziness of word class boundaries in Estonian is increased by the fact that the distributional criteria in traditional grammars are vague, too general and at times even incompatible. Being involved in the process of writing up the entries of

adpositions for *Eesti Kirjakeele Seletav Sõnaraamat* (EKSS), he had very practical concerns and pointed out the need for the reconsideration of the category of adpositions in Estonian grammars (Karelsen 1972: 71).

Similarly to the category of prepositions in English, majority of Estonian adpositions can also be used as independent adverbs or affixal adverbs¹² (the following examples are taken from Erelt et al. 1995: 33):

5. a) *Ta on kusagil seal taga.* (= adverb)
 he:NOM be-PRS:SG3 somewhere there behind
 'He is somewhere **behind** there.'
- b) *Ta ajab meid taga.* (= affixal adverb or particle)
 he:NOM make-PRS:SG3 we:PRT behind
 'He is chasing us.'
- c) *Ta on meie taga.* (= postposition)
 he:NOM be-PRS:SG3 we:GEN behind
 'He is **behind** us.'

However, Karelsen (1972: 72) has pointed out that it remains unclear why in the combination *koos vennaga* 'with brother' we have an adposition and in the combinations *läks vennaga kaasa* 'he/she went with his/her brother' and *on vennaga kaasas* 'is with his/her brother' an adverb. In addition, it is also worth noting that because most present-day adpositions are morpho-semantically transparent, there is no clear boundary between adpositions and inflected nouns (Grünthal 2003: 56). Such grammatical homonymy causes problems also in the practical task of tagging corpora (Habicht et al. 2000).

Taking into account the above mentioned problems with determining word classes, Grünthal has rightly emphasised that "the idea of comprehensive and exact list of adpositions is, in principle, contradictory" (2003: 56). He goes on to demonstrate that in different grammatical descriptions and lexical overviews the number of adpositions varies greatly and depends on the way they are determined (Grünthal 2003: 56). It is interesting to note, at this point, that while the English descriptive grammars (e.g. Quirk et al. 1985) give at least approximate numbers for the category of adpositions, no such list can be found in the Estonian descriptive grammar *Eesti Keele Grammatika* (1993, 1995). As one of the few linguists researching specifically Estonian adpositions, Palmeos (1973) does give an extensive list of Estonian adpositions along with their different uses. Moreover, the

¹² See footnote 6 p. 18 for the term *affixal adverb*.

following numbers have been posited for Estonian: Stoebe (cited in Grünthal 2003: 56) gives 89 adposition stems for Estonian, Tauli (cited in Grünthal 2003: 56) lists 140 postpositions, and EKSS (cited in Grünthal 2003: 56) gives a somewhat larger number of 185 adpositions in total, 135 are exclusively postpositions and 29 exclusively prepositions, and 19 are bipositional¹³. Here, I agree with Grünthal who has rightly stated that the:

“variation in the entries of the Standard Estonian language provides an illustrative example of the lexical and morphosyntactic ambivalence of adpositions. Some of the entries are presented and reported as adpositions, whereas others are presented within their historical framework as subentries of adverbs, nouns or denominalised verbs.” (2003: 56)

In defining the category of adpositions in Estonian, it is commonly stated that adpositions are uninflected words which belong together with a nominal and express different relations with that nominal (Palmeos 1973: 3, Erelt et al. 1995: 33). A distinctive morphological characteristic of Estonian adpositions is that like adverbs and particles they constitute three-member sets that are semantically and grammatically divided into the lative, locative, and separative form (see Table 2). The lative member expresses direction and takes either an illative or allative case ending; the locative member expresses location and takes either an inessive or adessive case ending; the separative member expresses direction and takes an elative or ablative case ending. Grünthal (2003: 74) has presented a list of adpositions in Standard Estonian where he notes that 83% of unambiguously genitive-governing Standard Estonian postpositions carry a productive local case ending. He states that “considering the fact that the interior local cases (illative, inessive, elative) denote more concrete spatial relations than the exterior ones, it is somewhat surprising that Estonian postpositions most commonly display the adessive” (Grünthal 2003: 74). He goes on to state that “however, this would appear logical in the light of the diachronic change that has influenced the exterior local cases in a number of Finnic languages” (Grünthal 2003: 74). It should be noted that there is an equal distribution of interior and exterior local case endings among the three-member sets of Estonian MEDIAL REGION postpositions (see Table 2).

¹³ The term *bipositional* refers to syntactically ambiguous adpositions which may occur either as prepositions or postpositions (Grünthal 2003: 46).

Table 2. The three-member sets of Estonian MEDIAL REGION postpositions

	LATIVE (illative, allative)	LOCATIVE (inessive, adessive)	SEPARATIVE (elative, ablative)
Interior	<i>hulka</i> ‘(to) among’	<i>hulgas</i> ‘(in) among’	<i>hulgast</i> ‘from among’
	<i>sekka</i> ‘(to) among’	<i>seas</i> ‘(in) among’	<i>seast</i> ‘from among’
Exterior	<i>keskele</i> ‘(to) the middle of’	<i>keskel</i> ‘at the middle of’	<i>keskelt</i> ‘from the middle/ of’
	<i>vahele</i> ‘(to) between’	<i>vahel</i> ‘(at) between’	<i>vahelt</i> ‘from between’

A very interesting research topic would be to study whether and how the case endings influence the meaning of Estonian postpositions, i.e. does it somehow reflect in their semantics which case endings, either interior or exterior, they have affixed during the course of grammaticalization. Unfortunately, this issue cannot be further discussed in the present thesis, but cross-linguistic studies are being carried out in this area by the research groups headed by Ojutkangas and Huumo.

The Estonian adpositional phrase consists of an NP and a pre- or postposition (Erelt et al. 1993: 137). Estonian adpositional phrases, especially prepositional phrases are exocentric, because neither of the two constituents can be omitted (Erelt et al. 1993: 137, Grünthal 2003: 47). According to Grünthal (2003: 47) postpositional phrases are also exocentric, but they are syntactically more flexible than prepositions. Table 3 presents the morphosyntax and case government of Estonian adpositions.

Table 3. The morphosyntactic structure of Estonian adpositional phrases (Grünthal 2003: 62)

Adposition type	Inflection of noun	Inflection of adposition
Preposition	N + PART (occasionally + GEN or INSTR)	Not inflected
Postposition	N + GEN	Commonly inflected; most frequently a local case suffix

At the clause level, the Estonian adpositional phrase has two basic functions, that of an adverbial (6a) and adverbial modifier (6b) (Erelt et al. 1993: 137):

6. a) *Ta kõndis ümber maja.*
 he:NOM walk-PST:SG3 around house:GEN
 ‘He/She walked **around** the house.’
- b) *Töö peale mõtlemine ei lasknud teda uinuda.*
 job:GEN onto thinking:NOM not let-PST:PCPL he:PRT fall-asleep-SUP
 ‘Thinking about the job prevent him from going to sleep.’

Grünthal (2003: 63) emphasises that although prepositions and postpositions belong to the same category and the same items may in certain cases even be used both as prepositions and postpositions, their syntactic location and relation with respect to the noun differ in many ways. Table 3 presents the main morphosyntactic characteristics of Estonian prepositional and postpositional phrases.

Table 4. The morphosyntactic characteristics of the Estonian prepositional and postpositional phrases (Grünthal 2003: 65)

Prepositions	Postpositions
predominantly partitive-governing	predominantly genitive-dominant
low degree of inflection, occasional case inflection	higher degree of inflection, case inflection to some extent
no possessive suffixes	
prevailing semantic roles: path, circumspatial	prevailing semantic roles: spatial
additional NP determiners such as pronouns and attributes may be located between the two components of PrepP	no free word may be added between the noun and the postposition

Tauli (1966: 44) has also proposed that the meaning of the prepositions is often more abstract and that of the postposition more concrete. Although this is an appealing claim, the linguistic data for the Estonian MEDIAL REGION postposition *keskel* and preposition *keset* does not substantiate it.

To conclude, it can be claimed that the category of adpositions in Estonian, like in English, is not an uncontroversial one. Many questions and issues remain, for example, in distinguishing the use of a linguistic element as a postposition or an adverb. In Estonian, grammatical homonymy also plays a role and somewhat complicates matters. A distinguishing aspect of Estonian is that it has both prepositions and postpositions. Having outlined the descriptive and traditional account of adposition categories in English and Estonian, I will now turn to the Cognitive Grammar treatment of word classes, which in comparison with descriptive approaches, emphasises the symbolic, i.e. semantic and conceptual nature of word classes.

1.2.3 Word Classes in Cognitive Grammar

One of the central postulations of Cognitive Grammar is that it does not recognise a distinct level of syntactic organization (Taylor 2002: 164, Langacker 1987, 2008).

However, Cognitive Grammar does not deny the existence of such categories as *noun*, *verb*, *adverb*, *preposition*, *clause*, etc., but these are taken to be symbolic units. In Cognitive Grammar the interplay between distributional and symbolic, i.e. semantic, aspects of word classes is emphasised (Taylor 2002: 167). According to Langacker (2008: 93), one of the fundamental dogmas of modern linguistic theory includes that grammatical classes cannot be defined semantically. Although modern descriptive grammars do employ semantic criteria (e.g. Quirk et al. 1985, Huddleston and Pullum 2002, Erelt et al. 1993, 1995), it can be seen from the above discussion that a lot of definitional criteria still has to do with morpho-syntactic aspects.

My conclusions are in accordance with Langacker's idea that "[t]raditional terms lack precise definition, are inconsistent in their application, and are generally inadequate (let alone optimal) for describing grammar" (2008: 96). Although Langacker does express his dissatisfaction with traditional categories, he still regards such central terms as *preposition*, *adverb*, *participle* "useful enough and so frequently invoked that they can hardly be avoided" (2008: 96). Moreover, he admits that "if they are not pushed too far, traditional grammatical classes have considerable descriptive unity over a wide spectrum of diverse languages" (Langacker 2008: 122).

In comparison to more traditional approaches, the Cognitive Grammar account of grammatical categories meets "the requirements of being flexible, allowing cross-cutting classifications, and accommodating both construction-based and meaning-based classes" (Langacker 2008: 123). Because cognitive salience is a matter of degree, Cognitive Grammar does not posit any fixed, definite inventory of universal categories. Instead, how many classes we adopt/identify depends on the depth of our analysis.

As already mentioned, Cognitive Grammar provides a conceptual definition of major word classes (Langacker 1987, 2008). What this means in essence is that "[c]ategory members represent experientially grounded **conceptual archetypes** and as such are appropriate as the **prototypes** for linguistic categories" (Langacker 2008: 94). An important Cognitive Grammar notion related to categorization is **profiling**. In Cognitive Grammar terminology the profile of an expression is what the expression designates (Taylor 2002: 591, Langacker 2008: 98). Langacker (2008: 98) points out that profiling is

critically important for the following reason: “what determines an expression’s grammatical category is not its overall conceptual content, but the nature of its profile in particular”. The profile is the focus of attention within the content evoked. For example, whether *bat* is categorised as a noun or as a verb depends on whether it profiles the wooden implement or the action of using it (Langacker 2008: 98).

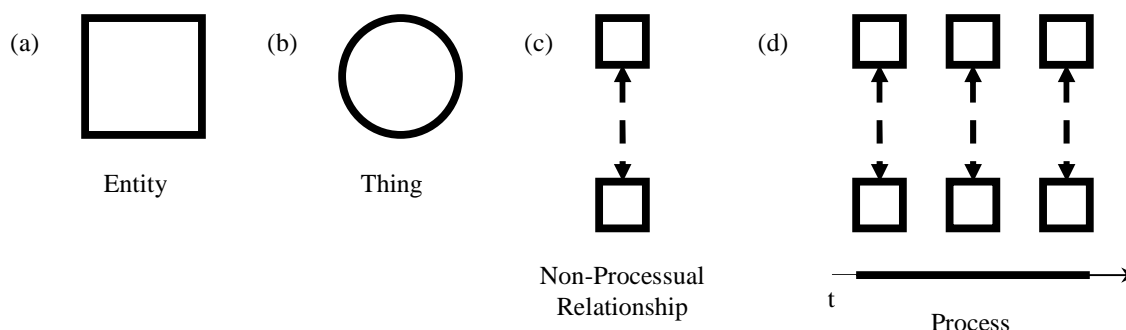
In Cognitive Grammar all words designate entities; Langacker (1987: 198, 2008: 98) uses **entity** as a useful cover term for anything we might conceive of or refer to for analytical purposes; it can be applied to anything when describing conceptual structure: things, relations, quantities, sensations, changes, locations, dimensions, points on a scale, interconnections, values, and so on. In schematic diagrams¹⁴ entities are shown as rectangles (Figure 1a).

Langacker (2008) defines the basic word classes in terms of what an expression profiles¹⁵. At the most general level, Langackerian Cognitive Grammar makes a fundamental distinction between nominal predication and relational predication: “a **nominal predication** designates a **thing**, while a **relational predication** designates either an **atemporal relation** or a **process**” (Langacker 1987: 183). Thus a noun is defined schematically as an expression that profiles a thing and the members of other basic classes profile relationships. In Cognitive Grammar diagrams, a thing is represented by a circle (Figure 1b); relationships are often depicted by lines or arrows connecting the entities participating in them (Figure 1c-d). In addition to the basic distinction between things and relationships, various kinds of more specific relationships are distinguished in Cognitive Grammar. The distinction between a **process** and a **non-processual relation** is the most fundamental. A verb in Cognitive Grammar is schematically defined as an expression that profiles a process (developing through time, represented by the arrow labelled *t* in Figure 1d). A number of other traditional categories, including adjective, adverb, preposition, and participle are all characterised as profiling non-processual relationships (Figure 1c).

¹⁴ Schematic descriptions form an essential part in Cognitive Grammar framework and the schematic diagrams presented here are later applied in the analysis of English and Estonian MEDIAL REGION adpositions.

¹⁵ The following discussion is based on Langacker (2008).

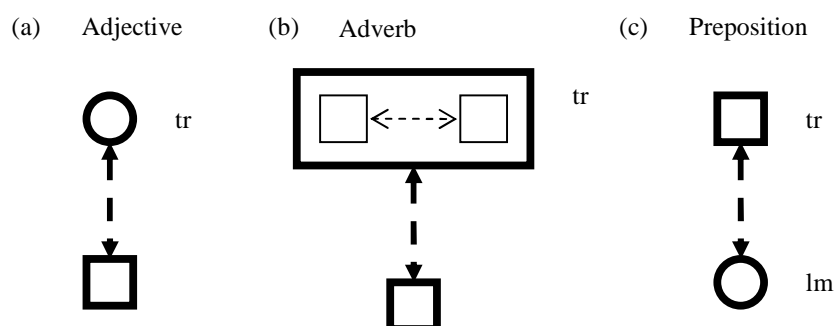
Figure 1. Schematic diagrams for the basic Cognitive Grammar categories (Langacker 2008: 99)



Within the global category of **non-processual relationships**, a further distinction is made based on the number and nature of their focal participants. Within a relationship, it is usual for one participant to be made the primary focus (the **trajector**); additionally, there is often a secondary focal participant (the **landmark**).¹⁶ This trajector/landmark organization is inherent in the meanings of relational expressions, even when the focused elements fail to be overtly manifested. This relationship between focal participants is crucial in Cognitive Grammar for distinguishing between different relational expressions, i.e. such traditional word classes as adjective, adverb, and preposition. This distinction is particularly relevant for the purposes of the present thesis, as my study includes both prepositions and adverbs. These may be taken together as constituting the “global category” of non-processual relations (Langacker 2008: 100). The schematic descriptions for the members of the category of non-processual relations are given in Figure 2. The most basic difference between these categories is whether there is a single focal participant or two: **adjectives** and **adverbs** differ from **prepositions** in having only single focal participant (a trajector but no focused landmark) In addition, adjectives and adverbs differ from one another in the nature of their trajector: adjectives have things as their trajector and adverbs have relationships (Figure 2a-b). A preposition’s trajector can be either a thing or a relationship (characterised schematically as an entity which refers to both things and relationships), while its landmark is a thing (Figure 2c).

¹⁶ The notions of *trajector* and *landmark* were introduced in section 1.1.1.

Figure 2. The Cognitive Grammar category of non-processual relations (Langacker 2008: 116)

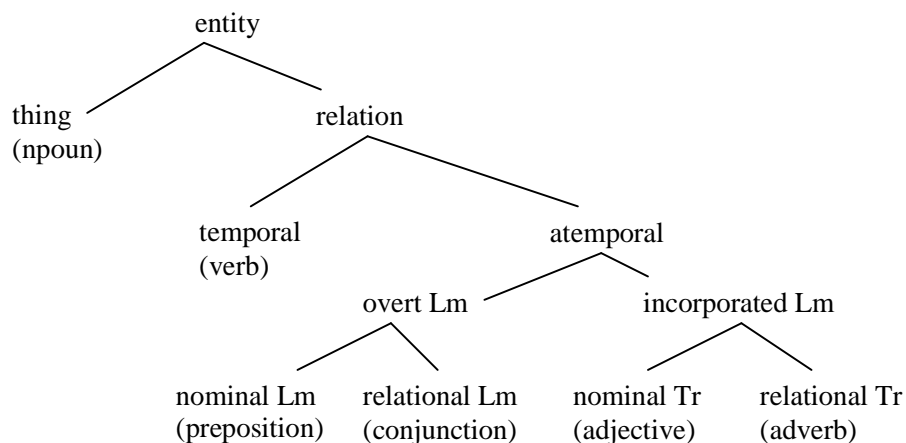


The distinctive property of prepositions is the conferring of secondary focal prominence on a thing, a landmark. This landmark is expressed by the prepositional object, e.g. *in August*, *under the bed*, *with a screwdriver*. A preposition may have both “adjectival” uses, where the trajector is a thing (example 7a), and “adverbial” uses, where the trajector is a relationship (example 7b) (Langacker 2008: 117):

7. a) *the last weekend in August*, *the dust under the bed*, *a boy with a screwdriver*
 b) *They got married in August*, *It's hot under the bed*, *She opened it with a screwdriver*

This is particularly the type of overlap that the CG approach tries to give account of, by not considering traditional categories of adjectives, adverbs, and prepositions as mutually exclusive classes. As a summary of the CG approach to word classes, I have presented in Figure 3 the coarse-grained taxonomy of the major lexical categories provided by Taylor (2002: 221).

Figure 3. Taxonomy of the major lexical categories in Cognitive Grammar (Taylor 2002: 221)



It can be concluded that although modern descriptive grammars (e.g. Huddelston and Pullum 2002) have taken a more meaning-based approach in describing the category of adpositions, the most useful approach for the purposes of the present thesis is that of Cognitive Grammar. This framework allows us to consider the uses of MEDIAL REGION adpositions as adverbs and particles as belonging to one and the same category, that of non-processual relations. Of course, this does not solve the many interesting issues related to word classes, e.g. whether there are correspondences between what a lexical item means and its word class membership. The issue of word classes merits, no doubt, an entire doctoral dissertation or even several ones. Since the emphasis in the present thesis is on the semantic properties rather than morpho-syntactic characterisation of MEDIAL REGION adpositions, I have deliberately avoided trying to provide clear-cut definitions for the categories of prepositions, postposition, adverbs, and particles. Instead, I pertain to the conceptual account provided in Cognitive Grammar.

As to “those diagrams”, I would like to quote Langacker who nicely summarises the ups and downs of using diagrams in Cognitive Grammar research:

On occasion I resort to diagrams. Of course, those occasions are rather frequent, and critics will no doubt aver that I use them excessively. It is certainly true that works in [Cognitive Grammar] (including this one) are often replete with diagrams, ranging from simple, cartoon-like sketches to elaborate technical displays of great complexity. There is, I suppose, no reason to be apologetic about it. After all, the

pages of staid linguistics journals are often splashed with tree-like diagrams drawn by formal syntacticians (not to mention phonologists). /.../ Indeed, we are witnessing the emergence of “scientific visualization” and the growing recognition of its importance to theory and research.

The diagrams must, however, be used with caution, for they can be misleading as well as informative: like any other notation, they omit as much as they reveal, and they are biasing if not distorting. Constant awareness of their limitations is well advised. (Langacker 2008: 9–12)

1.3 Cognitive Semantics Approach to Adpositions

This section outlines the cognitive linguistic approaches that have played a major role in the recent cross-linguistic studies on spatial language expressions. Some of the key notions of these approaches are also used in the present work on the semantics of English and Estonian MEDIAL REGION adpositions. The section starts off with a short historical overview; it will then go on to explain the key claims and assumptions made about meaning in **cognitive semantics**. Cognitive semantics is here taken as a cover term for the work of such scholars as Langacker (1987, 2008), Lakoff (1987), Johnson (1987), Fauconnier and Turner (2002), Talmy (2000), Sweetser (1990), who share some basic assumption about the essence of a semantic theory. After reviewing some general construal operations relevant in studying spatial language, different more specific proposals for the semantic analysis of adpositions are discussed. Special attention is paid to Langacker’s network model which is employed, together with the notational conventions of Cognitive Grammar (explicated in the previous section), in the semantic analysis of English and Estonian MEDIAL REGION adpositions.

Adpositions have been a neglected issue in general linguistics (Zelinsky-Wibbelt 1993: 1). During the second half of the last century, however, interest in adpositions has grown tremendously, so that it is no longer possible to keep up to date with all of the studies published. Earlier studies on spatial adpositions took what has been termed the *list method* approach to the issue. These were concerned with providing lists of uses for particular adpositions and other grammatical categories (Haspelmath 2003: 214). Although such lengthy lists of uses already indicated the probable polysemous nature of adpositions, it was only with the beginning of cognitive linguistics that the polysemy of adpositions began to attract wider attention in linguistics. One of the first and to date most important

cognitive semantic studies on spatial language is Talmy's *How Language Structures Space* (1983). Talmy (1983) and other earlier researchers (e.g. Bennett 1975, Herskovits 1986, Landau and Jackendoff 1993) have focused on the geometric and topological properties of location expressions, i.e. on how linguistic forms encode the geometric relations between objects. More recent studies have also embraced other factors such as force-dynamics and function in their approaches to prepositional semantics (e.g. Coventry, Carmichael and Garrod 1994, Coventry and Garrod 2004, Feist 2000, Feist and Gentner 2003, Navarro-Ferrando 1998, Tyler and Evans 2003, Vandeloise 1991). Many of these researchers have carried out different experiments which have confirmed the assumption that the semantic representation of prepositions should include geometric as well as functional information.

Semantics plays a central role in cognitive linguistics: “meaning is what language is all about” (Langacker 1987: 12). This **centrality of meaning** is the main feature that distinguishes cognitive linguistics from the autonomous approaches to linguistics (Lee 2001: 1, Saeed 2003: 344). Taylor (2002: 186) points out that meaning is a difficult topic to address in a systematic way and that it has simply been ignored in the Bloomfieldian and Chomskyan tradition. Cognitive semantics, however, has successfully managed to incorporate semantics into linguistic theory – it is by now an integral part in any linguistic studies and descriptions. Cognitive semantics can be seen as an opposite to the propositional and truth-conditional semantic theories, which typically assume that language is a separate faculty of the human mind (Chomsky 1957, 1965; Fodor 1983). Cognitive linguists refute this kind of objectivist approach and argue instead for a conceptualist view. According to Lakoff:

Where objectivism defines meaning independently of the nature and experience of thinking beings, experiential realism characterizes meaning in terms of *embodiment*, that is, in terms of our collective biological capacities and our physical and social experiences as beings functioning in our environment. (Lakoff 1987: 266-267)

Thus, one of the basic hypotheses of cognitive semantics is that meaning is **conceptualisation** (Croft and Cruse 2004: 40). Scholars from the cognitive tradition all view language as embedded in human cognition, i.e. in experience, understanding, and imagination. In cognitive semantics, linguistic meaning is **embodied** – it has an experientialist basis. According to Saeed, semantic representations have to be grounded in some way and in cognitive semantics this “grounding is sought not directly in reality [...]

but in conceptual structures derived from the experience of having human bodies and of sharing in social conventions, and all that this implies (2003: 379). Thus, words have meaning only for people who use them to mean something; words in themselves mean nothing (Johnson 1987: 177).

1.3.1 Construal Operations

Construal is an important concept in cognitive semantics. It pertains to the notion that situations can be framed in different ways according to the possible different conceptualisations of the relationship between the participants in the scene. It also relates to the idea that an expression's meaning depends on factors other than the situation described, e.g. background knowledge of the language users, the physical, social, and linguistic context (Langacker 2008: 4). Thus, cognitive linguists investigate the conceptual processes which reveal the importance of the speaker's construal of a scene (Saeed 2003: 345). One and the same scene may be expressed in different ways, depending on what the speaker wants to highlight.

Croft and Cruse (2004: 40-73) describe a whole range of conceptualization processes or **construal operations** that humans employ in language and which can be seen as instances of general cognitive processes. Their approach is novel in bringing together under one general classification the many construal operations identified by various cognitive linguists, e.g. Talmy's (1988) imagining systems, Langacker's focal adjustments (1987), and Johnson's (1987) image schemas¹⁷. Croft and Cruse (2004: 45-46) list the construal operations under four basic cognitive abilities in different aspects of experience: attention/salience, judgement/comparison, perspective/situatedness, constitution/Gestalt. These operations reveal the importance attached in cognitive semantics to the role of the speaker's construal of a situation in determining meaning. From the different linguistic construal operations put forward, the present thesis makes use of the following: profiling, scope of attention, metaphor, categorization, figure/ground, perspective, structural schematization, and image schemas.

¹⁷ For a discussion on similarities, differences, and overlappings in the classification of construal operations in these approaches, see Croft and Cruse 2004, pp. 43–73.

One of the most fundamental cognitive processes related to language is attention (Croft and Cruse 2004: 46). It is characteristic of attention that we can select one object or another as the focus of our attention. Langacker (1987, 2008) uses the term **profiling** for this cognitive ability of selection. A linguistic expression selects a certain body of conceptual meaning as the basis for its meaning, which in Cognitive Grammar is called the **base** (Langacker 2008: 66). Within this base, attention is directed to a particular substructure, called the **profile**; “thus an expression’s profile stands out as the specific **focus** of attention within its /.../ scope” (Langacker 2008: 66).¹⁸

This focus of attention or focal adjustment (Langacker 1987, 2008) is therefore related to the construal operation **scope of attention**. Croft and Cruse (2004: 50) note that a grammatical constraint that makes reference to the scope of attention is the way locative expressions specifying a location are combined. A telling feature, at least for the present author, of MEDIAL REGION adpositions in both English and Estonian is that they appear in what Langacker (1987: 285) has called “nested locative” constructions. Langacker (*ibid.*) provides the following example of this phenomenon: *The heating pad is upstairs in the bedroom in the closet on the top shelf*. In such constructions, each locative expression profiles an entity in the scope defined by the preceding locative expression (Croft and Cruse 2004: 51). According to Langacker (1987: 285–286), the order of locative phrases in nested constructions is significant – each locative serves to confine the location of the trajector to a smaller region than the preceding. Croft and Cruse also emphasise that “scrambling the order of locative expressions creates cognitive chaos” (2004: 51).

Probably the most widely discussed construal operation in cognitive linguistics is **metaphor**. The approach to metaphor taken in cognitive linguistics is termed Conceptual Metaphor Theory and it was developed by Lakoff and Johnson in their seminal book *Metaphors We Live By* (1980). In the classification of construal operations by Croft and Cruse (2004: 54) metaphor, together with another central conceptual process **categorisation**, involves the psychological processes of judgement and comparison, i.e. we judge something as similar to something else. Majority of cognitive linguists agree with the

¹⁸ See section 1.2.3 for further discussion on profiling.

proposals of Lakoff and Johnson (1980) that metaphor is essential to categorisation of the world and thinking processes. As Johnson puts it:

[Metaphor] is one of the chief cognitive structures by which we are able to have coherent, ordered experiences that we can reason about and make sense of. Through metaphor, we make use of patterns that obtain in our physical experience to organize our more abstract understanding. (Johnson 1987: xv)

Conceptual metaphors involve a source domain (usually concrete and familiar), a target domain (usually abstract), and a relationship between the two conceptual domains, i.e. mappings. An example of a conceptual metaphor is ARGUMENT IS WAR¹⁹ (Lakoff and Johnson 1980). Conceptual metaphors are manifest in numerous linguistic expressions of everyday speech, including idiomatic expressions, phrasal verbs, collocations, compounds. For example, the following linguistic expressions (examples 8a-g, taken from Lakoff and Johnson 1980) all reflect the conceptual metaphor ARGUMENT IS WAR:

8.
 - a) *Your claims are **indefensible**.*
 - b) *He **attacked every weak point** in my argument.*
 - c) *His criticisms were **right on target**.*
 - d) *I **demolished** his argument.*
 - e) *I've never **won** an argument with him.*
 - f) *If you use this **strategy**, he'll wipe you out.*
 - g) *He **shot down** all of my arguments.*

Lakoff and Johnson (1980) have distinguished between different types of conceptual metaphors: structural, ontological and orientational. The last group is especially important because it includes spatial metaphors related to spatial orientation of verticality, e.g. HAPPY IS UP, SAD IS DOWN, GOOD IS UP, BAD IS DOWN, etc. Cognitive linguists argue that because of the ubiquitous nature of conceptual metaphors in both language and thought, they influence a wide range of linguistic phenomena. Although the status of conceptual metaphors, like that of polysemy, is a heatedly debated issue in cognitive linguistics, no cognitive semantic analysis can do without metaphors. In Estonia, conceptual metaphor theory has been used, for example in the studies by Krikmann (2002, 2003), Veismann (2001) and Kährik (2002). In the present thesis, the conceptual metaphor TIME IS SPACE plays a role in the semantic description of some of the spatial MEDIAL REGION adpositions

¹⁹ In cognitive linguistics, the tradition is to write conceptual metaphors with small capital letters.

in English and Estonian. The spatial experience of being located in the space between two objects or in the middle of another object is mapped onto the domain of time²⁰.

A third example of comparison as a linguistic construal, besides metaphor and categorisation, is **figure-ground** alignment. The figure-ground distinction is derived from Gestalt psychology and introduced into cognitive linguistics by Talmy (Croft and Cruse 2004: 56). Talmy (1983, 2000) uses the figure-ground relation to account for the expression of spatial relations in natural language. All spatial relations in language (including MEDIAL REGION adpositions) – both location and motion – are expressed by specifying the position of one object, the **figure**, relative to another object, the **ground** (Croft and Cruse 2004: 56). Talmy (1983: 230–231, 2000: 315–316) identifies certain object properties that favour the figure or ground construal; these are presented in Table 4 along with definitional criteria.

Table 5. Definitional and associated characteristics of Figure and Ground (Talmy 2000: 315-316, based on Talmy 1983: 230–231)

	Figure	Ground
<i>Definitional characteristics</i>	Has unknown spatial (or temporal) properties to be determined	Acts as a reference entity, having known properties that can characterize the Figure's unknowns
<i>Associated characteristics</i>	<ul style="list-style-type: none"> • more movable • smaller • geometrically simpler (often pointlike) in its treatment • more recently on the scene/in awareness • of greater concern/relevance • less immediately perceivable • more salient, once perceived • more dependent 	<ul style="list-style-type: none"> • more permanently located • larger • geometrically more complex in its treatment • more familiar/expected • of lesser concern/relevance • more immediately perceivable • more backgrounded, once Figure is perceived • more independent

Nevertheless, humans also have the ability to manipulate the figure-ground relations: the same object can function as figure in one context and ground in another (Croft and Cruse 2004: 56-57). According to Croft and Cruse (2004: 58) “figure-ground

²⁰ See chapter 2 for specific examples with MEDIAL REGION adpositions.

alignment is an example of comparison in that the two elements of the scene are compared to each other; but unlike categorization and metaphor, the judgement is one of contrast rather than similarity.” It should be pointed out that the concepts of figure-ground, profile-base and trajector-landmark all pertain to the same phenomenon. However, Ilona Tragel and Ann Veismann (personal communication) have suggested that we can regard these concepts in the following way: figure-ground are used to express how humans perceive entities in the world, profile-base are the conceptual contents of the expression, and trajector-landmark are used when describing the linguistic expressions.

Another influential construal operation related to the present thesis is **perspective**. It is essential for spatial descriptions, but it is also important in nonspatial domains, where our knowledge, belief and attitudes play a fundamental role (Croft and Cruse 2004: 58). The present thesis adopts Langacker’s (1987, 2008) notion of perspective, which includes both **viewpoint** and **focus**. Focus has to do with the figure/ground alignment discussed above. Viewpoint further subsumes the notions of **vantage point** (the position from which a scene is viewed) and **orientation** (alignment with respect to the axes of the visual field) (Langacker 1987: 123). Thus, this construal operation reflects the importance attached in cognitive semantics to the selection of the observer’s viewpoint and the choice of elements focused on (Saeed 2003: 377). For example, in the sentence *The children ran around the house* there is a choice between external and internal viewpoints because of the dual interpretation of the preposition *around* (ibid.). Taking an external viewpoint, the scene is that of children running in circles outside of the house; from an internal viewpoint, the children are moving around in the interior of the house. The importance of this construal operation has been stressed by Veismann (2004, 2006, 2008), who has proposed that the polysemous uses of Estonian adpositions can be described by one and the same schema from different perspectives.

An important construal operation that plays a role in linguistic space descriptions is **structural schematization**, which “describes the conceptualization of the topological, meronomic and geometrical structure of entities and their component parts” (Croft and Cruse 2004: 63). This is related to such principles of Gestalt psychology as proximity, bounding, and how humans construe a single complex from seemingly fragmented parts (ibid.). In cognitive semantics, the most detailed discussion of these construal operations is

provided by Talmy (2000: 47–68)²¹. One subgroup of structural schematization is **individuation**, which concerns whether or not entities are individuated, the relations between their parts, their multiplicity, etc. (Croft and Cruse 2004: 63–64). This is in turn closely related to **boundedness** (Langacker 1987, Talmy 2000). Such basic structural properties of entities are manifested in the choice of a count noun, mass noun or pluralia tantum form, and aspectual inflections for verbs (Croft and Cruse 2004, Langacker 2008, Talmy 2000). These linguistic phenomena are precisely a matter of construal. Croft and Cruse (2004: 64) give the following examples: a *person, star, island* represent individuals bounded spatiotemporally; but a *team, constellation, archipelago* are also bounded entities (count nouns) where the speaker has construed them as whole units with distinct parts.

Another subgroup of structural schematization is **topological/geometric schematization** (Croft and Cruse 2004: 64). This construal operation is directly related to **image schemas** (Clausner and Croft 1999, Johnson 1987, Lakoff 1987), which provide a conceptualization derived from perception and bodily experience. According to Johnson:

An image schema is a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience. One of the central arguments of this book is that experientially based, imaginative structures of this image-schematic sort are integral to meaning and rationality. (Johnson 1987: xiv)

It is important to note that image schemas are not specific images but are schematic²². They present schematic patterns arising from our physical experience of being and acting in the world, e.g. moving our bodies, exerting force, etc. Johnson showed that image schemas “are pervasive, well-defined, and full of sufficient internal structure to constrain our understanding and reasoning” (1987: 126). Thus, it can be concluded that they are somewhat more basic than e.g. the higher level conceptual structure of metaphor. Cruse and Croft (2004: 45) have made an inventory of image schemas based on Johnson (1987), Lakoff and Turner (1989), Clausner and Croft (1999):

SPACE	UP-DOWN, FRONT-BACK, LEFT-RIGHT, NEAR-FAR, CENTRE-PERIPHERY, CONTACT
SCALE	PATH
CONTAINER	CONTAINMENT, IN-OUT, SURFACE, FULL-EMPTY, CONTENT

²¹ The original article by Talmy was published already back in 1988.

²² See the discussion in Estonian linguistics (Veismann 2006) about the appropriate translation equivalent for this term: *kujutlusskeem, kujundiskeem, skeemkujutus*.

FORCE	BALANCE, COUNTERFORCE, COMPULSION, RESTRAINT, ENABLEMENT, BLOCKAGE, DIVERSION, ATTRACTION
UNITY/MULTIPLICITY	MERGING, COLLECTION, SPLITTING, ITERATION, PART-WHOLE, MASS-COUNT, LINK ²³
IDENTITY	MATCHING, SUPERIMPOSITION
EXISTENCE	REMOVAL, BOUNDED SPACE, CYCLE, OBJECT, PROCESS

Croft and Cruse (2004: 45) emphasise that most if not all of these construal operations are special cases of general cognitive processes described in psychology; which in turn follows from the basic hypothesis in cognitive linguistics that language is an instance of general cognitive abilities. Precisely due to their pervasive nature, majority of the above image schemas play a role in the present semantic analysis of English and Estonian MEDIAL REGION adpositions as well. The image schemas especially relevant for these adpositions are the following: CONTAINER, BLOCKAGE, LINK, SPLITTING, PATH, and SCALE, which are described and discussed in greater detail in chapter 2.

As this short discussion of only a number of construal operations shows, speakers have the ability to frame a situation or a scene in different ways, depending on their background knowledge and the physical, social, and linguistic context. Sometimes these construal operations are subconscious and other times conscious conceptualizations of our experience. Any sentence or linguistic expression can involve a “myriad of construals”, everything from the choice of words to the various inflections and constructions (Croft and Cruse 2004: 69). Construal is a central aspect of language and because of that plays also a major role in the present thesis. The next subsection will turn to the more specific descriptive models put forward within cognitive semantics in analysing spatial adpositions.

1.3.2 Polysemy, Prototypes and Radial Networks

A claim often made in cognitive semantics is that lexical items and particularly prepositions are strongly **polysemous**, i.e. characterized by a multiple set of distinct but systematically related senses (Zlatev 2007: 334). The issue of polysemy has triggered a lot of heated debate in cognitive linguistics. Ever since the publication of the first cognitive semantic studies on polysemy, especially those on the English preposition *over* (Brugmann 1988, Lakoff 1987), there has been lively discussion in academic journals and international conferences about the nature and mental representation of polysemy (e.g. Croft 1998,

²³ Though Croft and Cruse (2004: 45) place the image schema LINK under the heading UNITY/MULTIPLICITY, then for the present author image schemas PATH, SCALE, LINK are taken to belong together.

Sandra 1998, Tuggy 1999). Still, according to Svorou “[w]hat is generally held and argued for, on the theoretical level and shown on the experimental level, is the validity of a polysemic approach to the representation of relational grams²⁴ in contrast to a monosemic approach” (2007: 736). Veismann (2008) has written an in-depth article on the problems related to the semantic description of Estonian adpositions. In this article she discusses, among other things, the nature of radial networks as descriptive models of polysemy, how many senses a semantic network has, and whether the central sense of the network is indeed spatial.

From the construal operations described in the previous section, image schemas and their extension by metaphor have been used by cognitive linguists to describe the polysemy of prepositions (Brugmann 1988, Lakoff 1987, Tyler and Evans 2003). Cognitive semantic analyses of polysemy are usually depicted as **networks** of nodes representing different senses and connected via links. The most influential study on this topic is Lakoff’s analysis of the preposition *over* (1987). His approach to lexical semantics has given rise to a significant body of subsequent work in analyzing word meaning. He argued that lexical items represent **radial categories** structured with respect to a **prototype**. In this structured network more prototypical senses are closer to the central prototype, while less prototypical senses are further from the prototype. Sense relations are motivated and derive from the more prototypical sense via such cognitive mechanisms as conceptual metaphor and image schema transformations. Lakoff’s (1987) analysis of the English preposition *over* is sometimes described as the full-specification approach.

Evans and Green (2006: 339) note that although Lakoff’s theory has been hugely influential, there are a number of grave problems with it. It has been criticized for the proliferation of distinct senses and for lack of methodological constraints (Sandra and Rice 1995, Sandra 1998). In relation to these problems Sandra (1998: 368–375) talks about the polysemy fallacy: just because lexical items can exhibit polysemy, it does not follow that all or even many distinct senses are instances of polysemy. This fallacy does not, of course, pertain only to Lakovian semantic analyses, but to (cognitive) linguistic studies on polysemy more generally. The more recent development in the work on polysemy networks

²⁴ Svorou (2007, 1994) takes *relational grams* to mean such linguistic items as prepositions, postpositions, particles, etc.

and radial categories, that of **Principled Polysemy** proposed by Evans and Tyler (2003), takes up Sandra's (1998) challenge to develop clear principles to make semantic network analyses objective and verifiable (Evans and Green 2006: 342, Tyler and Evans 2003: 7). Although Tyler and Evans put forward rigorous methodology for determining both distinct senses (2003: 42–45) and the primary sense (2003: 45–50), their analysis suffers from a similar weakness as Lakoff's (1987) – it is based solely on authors' intuitions. They do not verify the results of their study empirically – they have not conducted any corpus analyses or psychological experiments (Veismann 2008: 339).²⁵

As can be seen from the above discussion, there are problems related to both Lakoff's (1987) and Tyler and Evans's (2003) approach to the description of polysemy. Similar to Veismann (2008), the author of the present thesis finds Langacker's (1987, 1990/2002) network model more convincing as it unites the two central notions in polysemy approaches, that of schema and prototype. The next sub-section will turn to the discussion of Langacker's approach which is later applied to the semantic analysis of MEDIAL REGION adpositions in English and Estonian.

1.3.3 Langacker's Network Model

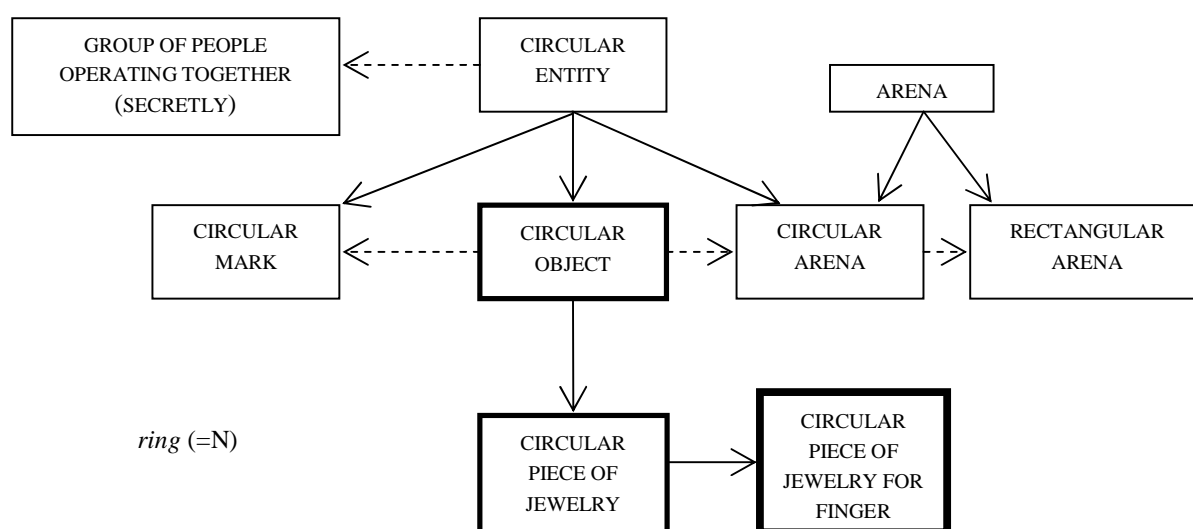
Langacker's (1987, 1990/2002, 2008) approach to word meaning is **schematic**, i.e. there are abstractions of a word's meaning from its specific instantiations in language use. When extracting the commonality inherent in the many instantiations we can arrive at a conception representing a higher level of abstraction (Langacker 2008: 17). Cognitive linguistic analyses often demonstrate that any lexical item of any frequency tends to be polysemous; such multiple senses are linked by relationships of categorization. As mentioned in the previous section, **categorization** is related to comparison judgements and it describes our interpretation of experience with respect to previously existing experiences. According to Langacker (2008: 17) a **category** is a set of elements judged equivalent for some purpose. Furthermore, categories are characteristic of every aspect of linguistic structure and most of them are actually complex categories, i.e. its membership and configuration are not reducible to any single element (Langacker 2008: 225–226). In the

²⁵ For a critical overview of Tyler and Evans (2003), see Filipovic Kleiner (2003), for further discussion, Tyler (2006) and Filipovic Kleiner (2006).

present thesis the MEDIAL REGION itself and MEDIAL REGION adpositions are taken to constitute complex categories, which are described in chapter 2.

Langacker's (1987: 371, 1990/2002: 266) network model represents a synthesis of prototype theory and categorization based on schemas. Similarly to the above mentioned radial networks, in Langacker's model the members of a category are analysed as nodes in a network, linked to one another by various categorizing relationships (1990/2002: 266). Figure 4 presents a partial network for the noun *ring* (taken from Langacker 2008: 37).

Figure 4. Partial network for the noun *ring* (Langacker 2008: 37)



In such Langackerian networks (e.g. Figure 4), some of the related elements (in case of lexical items, such as *ring*, these are the polysemous senses) are more central or **prototypical** than others and some are **schemas** that are elaborated or instantiated by others (Langacker 2008: 37). The boxes drawn with heavy lines indicate the most prototypical senses and different members can be characterised by various levels of prototypicality, i.e. the thickness of boxes hints at the measure of each unit's entrenchment and ease of activation (Langacker 2008: 225). The most entrenched and the most readily activated member can be seen as the category **prototype**. The arrows in such networks represent categorizing relationships (Figure 5): solid arrows are used for the elaboration of a schema and dashed arrows for extension from a more central meaning. The categorizing relationship of **elaboration** (Figure 5b) indicates that B is fully compatible with A's specifications but is characterized with greater precision and detail; we can say that A is

psycholinguistic studies do not support the (active) mental representation of polysemous networks with spatial prototypes and metaphorical extensions (*ibid.*), it does not mean that such networks do not hold any value. Most importantly they are seen as a useful descriptive tool in cognitive semantic analyses. At the same time, even though I agree with Croft (1998) and Sandra (1998), who have emphasised that analysts should show evidence beyond their own intuition to back up their analyses and be careful what they can actually claim based on their results, I also believe, like Tuggy (1999) and many other cognitive linguists, that linguists do not have to become psychologists.

CHAPTER 2. SEMANTIC ANALYSIS OF ENGLISH AND ESTONIAN MEDIAL REGION ADPOSITIONS

2.1 Introduction

The central topic of the present and the next chapter is the semantics of the following MEDIAL REGION adpositions in English and Estonian: *between, among(st), amid(st), in the middle of, in the centre of; vahel, vahele, vahelt, seas, sekka, seast, hulgas, hulka, hulgast, keskel, keskele, keselt, keset*. The aim of the analysis is to give a detailed semantic description of these adpositions following the network model proposed by Langacker (1987, 2008). The semantics of these adpositions is intriguing for a number of reasons. First of all, although the list of studies on adpositions (primarily on prepositions) is impressive, only a few authors have explicitly researched the semantics of MEDIAL REGION adpositions. Indeed, an extensive coverage of these adpositions is hard to come by; only a handful have devoted to the subject entire pages (e.g. Coventry and Garrod 2004, Lindstromberg 1998) and majority have limited themselves to a couple of lines (e.g. Landau and Jackendoff 1993, Svorou 1994). The present thesis aims to fill this void and hopes to show that such less-central adpositions are also worth studying.

Another reason why MEDIAL REGION adpositions are worth researching and “deserve” attention is because unlike other adpositions, they are said to require multiple landmarks. An intriguing characteristic of MEDIAL REGION adpositions in English and Estonian is that these adpositions do not show rampant polysemy of the sort that adpositions like *in, on, over* show; instead, they appear to be, in a number of instances, synonymous. For example, the Estonian online thesaurus²⁶ gives the following synonyms for *hulgas*: *seas, seltsis, kambas, mestis, kirjas, killas, keskel*.

Section 2.2 describes the linguistic data used and the methodology employed. Section 2.3 provides an overall description of the category of MEDIAL REGION and serves as an introduction to the semantic analysis of the specific English and Estonian MEDIAL REGION adpositions presented in sections 2.4–2.6. The analysis makes use of both the data

²⁶ <http://www.eki.ee/dict/synonymid/synonymid.html>

described in section 2.3, as well as the results of the experiment discussed in detail in Chapter 3.

2.2 Method of Analysis

Gonzalez-Marquez et al. note in the introduction of a much-anticipated book titled *Methods in Cognitive Linguistics* that “growing is the awareness that linguistic theory and analysis should be grounded in the observation of language usage, in experimental tests of its validity, and in general knowledge of cognitive function” (2007: xxii). In the present thesis I have aimed at combining these different methodological aspects. I have conducted a corpus analysis, gathering enough instances of language usage. Then taking these results as the basis, I have tried to employ Langacker’s theory of cognitive grammar (1987, 1990/2002, 2000, 2008) to describe the English and Estonian MEDIAL REGION adpositions on a theoretical level, and in addition I have aimed at supporting some of my claims with experimental data.

Langacker’s Cognitive Grammar is a **usage-based model**. According to Barlow and Kemmer (2000: vii-xv), the different usage-based models share a number of fundamental assumptions. The following two fit in most closely to the present thesis: 1) there is an intimate relation between linguistic structures and instances of language use; 2) the importance of frequency – frequency of instance is a prime factor in the structure and operation of language; higher frequency of a unit or pattern results in a greater degree of entrenchment. In accordance to a usage-based model, I have aimed at relying in my semantic description of MEDIAL REGION adpositions on observations of data from actual uses of language.

Since cognitive linguistics is only a cover term for a broad range of approaches, there is no one central method of analysis. Different cognitive linguists have different opinions about the appropriate methodology to be used in analysing and describing linguistic phenomena. In fact, the issue of appropriate methodologies to be applied in cognitive linguistic research is at the moment a very hot topic. One might even go as far as saying that there is an ongoing “war” within cognitive linguistics between what Geeraerts

(1999) has termed the *idealist* and *empiricist* tendencies²⁷. Although both “sides” have their strong and weak points, I agree with Talmy (2007) who has emphasised the complementary nature of methodologies. He (Talmy 2007) describes the different methodologies in use, highlighting the strengths and weaknesses for each of them. For example, even though strongly criticised within the cognitive linguistics community, the methodology of **introspection** has been central in its development and continues as its main methodology (Talmy 2007: xii). Similarly, the aim in the present thesis is not to avoid introspection at all costs, but I have tried, where possible, to back up my intuition by using other methodologies.

One such an alternative methodology to use is **corpus analysis**. The advantage of corpora is the focus on naturalistically produced language and making a large quantity of texts available to research a particular linguistic phenomenon (Talmy 2007: xviii). The advantage is especially great if the frequency of occurrence or range of instantiations is the issue, as it is in the present thesis. **Dictionaries** are also to be regarded as forms of corpora (Talmy 2007: xviii), which is why I have included useful example sentences from such sources as well. Talmy (2007: xix) points out that direct introspection does not come up with the entire range of uses and thus a corpus should be consulted. However, the limitation of corpora is that they usually included written edited language use, which is different from the often elliptical and somewhat less grammatical (but still acceptable) language used in naturally occurring conversations.

Another methodology applied in this thesis is the **experimental** method, which provides the researcher with the products of the minds of other individuals (Talmy 2007: xx). Geeraerts (1994, cited in Navarro-Ferrando 1998: 145) points out that while psycholinguistic experiments lead to elicitation of individual phenomena, corpus analysis provides descriptions of social phenomena. Of course the experiment described in the present thesis is not as psycholinguistic as those described in journals like *Mind and Language* and *Cognition*, but it is still hoped that using the insights provided by other people besides the researcher will validate the assumptions posited. All of these different

²⁷ See also, for example, Huumo (to appear) for an insightful overview of the ongoing debate concerning empiricism and introspection in cognitive linguistics.

methodologies are taken as complementary in the present thesis. Neither of them alone can tell us the whole truth, if such a concept exists at all.

2.2.1 The Data

The linguistic data used in the semantic analysis of English and Estonian MEDIAL REGION adpositions is collected from three main sources. The first and the most important sources are corpora. The *British National Corpus*²⁸ (henceforth BNC) is used for the semantic analysis of English MEDIAL REGION adpositions. Table 6 gives the exact number of instances analysed for each English preposition; the table also indicates the total number of occurrences of these adpositions in this corpus. The BNC is a 100-million-word collection of samples of written and spoken language from a wide range of sources. Examples taken from this corpus retain their original coding and are indicated with the label BNC after the example.

Table 6. The English dataset

	Number of occurrence selected	Total number of occurrences in BNC
between	1 202	90 612
among	411	22 441
amongst	99	4 447
amid	205	1 068
amidst	50	484
in the middle of	200	2 846
in the centre of	141	1 057
TOTAL	2 308	122 955

The *Mixed Corpus of Estonian* (henceforth MCE), more specifically the balanced sub-corpus²⁹ of it, is used for the semantic analysis of Estonian MEDIAL REGION adpositions. Table 7 gives the exact number of instances analysed for each Estonian adposition; the table also specifies the total number of occurrences for these word forms in this corpus³⁰. The balanced sub-corpus of MCE contains 5 million words of journalistic text, 5 million

²⁸ BNC: <http://www.natcorp.ox.ac.uk/>

²⁹ MCE: <http://www.cl.ut.ee/korpused>

³⁰ In case of Estonian, we can only talk about the total number of instances for the specific *word form*, as such lexical units as *hulgast*, *seast*, *seas* can also instantiate the use of the nominal word *hulk* ‘amount’ and *sig* ‘pig’, i.e. there is grammatical homonymy.

words of fiction, and 5 million words of scientific texts. Examples taken from this corpus are indicated with the label MCE after the example.

Table 7. The Estonian dataset

	Number of occurrences selected	Total number of occurrences in MCE
vahel	947	10 876
vahele	52	2 654
vahelt	49	1 056
seas	204	2 361
sekka	56	439
seast	60	466
hulgas	223	3 377
hulka	56	2 499
hulgast	60	792
keskel	100	1 150
keskele	50	212
keskelt	50	128
keset	200	1 089
TOTAL	2 107	27 099

The aim of the corpus analysis was to provide a large enough sample of actual use of the English and Estonian MEDIAL REGION adpositions. These results were later used in the semantic analysis. As these adpositions were analysed from the perspective of Cognitive Grammar and the network model proposed by Langacker (1987, 2008), the results of corpus analysis were used in determining the prototypical member and the central schema of these categories³¹. I was especially interested in the frequencies of these adpositions, including the typical landmarks they occur with. The corpus analysis took place during the period between January 2007 and May 2008³².

The collection of data consisted in the retrieval of the above mentioned number of instances of the adpositions from the online corpora. The next step was the semantic labelling. In the first stage of analysis I distinguished the spatial uses from the abstract ones. Although temporal uses of these adpositions are maybe best considered as a special sub-part of the abstract ones, in my analysis I have chosen a three-way coding. The uses of

³¹ See section 1.3.3 for a full description of Langacker's network model.

³² Differently from the BNC, the Estonian MCE is continuously updated and changed.

MEDIAL REGION adpositions were coded as **spatial**, **temporal** or **abstract**. Of course positing such clear-cut categories is an illusion and wishful thinking, it is yet another example of how badly we humans want to categorise everything. There were plenty of cases where I simply relied on my intuition and coded the use accordingly. Deciding between the spatial and abstract uses of the adpositions *among*, *amid*, *seas*, *hulgas* was especially complicated. Uses similar to that in example sentence 9a were coded as spatial, sentences like 9b were coded as abstract:

9. a) CMF 854 *He went to live **among** the Nuer of the southern Sudan as a vulnerable outsider.* (BNC)
- b) CAG 1190 *Republicans also scored exceptionally well **among** people living in the urban social housing projects.* (BNC)

In the next stage my focus was on the nature of the landmarks the English and Estonian MEDIAL REGION adpositions were used with. I coded the landmarks for all of instances according to two main categories: quantity and animacy. For **quantity**, the labels were **singular**, **dual** and **plural**. Singular and plural labels refer to the grammatical number of the landmark. Thus, such collective nouns like *crowd*, *group*, *team*, etc. were coded as singular although they are conceptually plural. Dual was used for two landmarks or landmark groups (for *between* and *vahel* the duality of landmarks was often manifested in the use of the conjunctions *and*, *ja*). Plural was used to code the instances with more than two landmarks. For **animacy**, I had two subdivisions: **animate** and **non-animate**. Here, I decided to code such landmarks as political parties, organizations, etc. as animate, as they actually refer through conceptual metonymy to the people who form such groups. Via similar conceptual metonymy body parts were coded as animate. Animals were also coded as animate, while as plants and nature were not. Appendix 1 presents the full distribution of the analysed instances according to the labels just described.

As noted by Talmy (2007: xviii), dictionaries are also to be regarded as forms of corpus. Thus, some example sentences used in the analysis part come from various dictionaries. For English I have used the *Oxford English Dictionary* (OED)³³; for Estonian

³³ I have used the online version of the 20-volume Second Edition of the OED: <http://dictionary.oed.com> (it can be accessed for free through Tartu University Library's server).

I have used *Eesti kirjakeele seletussõnaraamat* (EKKS)³⁴. The example sentences taken from these sources are indicated with the labels OED and EKKS accordingly. Corpora and dictionaries are the two major sources for data used in this thesis; the third source includes the results of the experiment.

Additional source for authentic examples is the **World Wide Web**. I have used it both as a sort of a corpus and for checking expected findings – examples that matched the intended search queries. Although some corpus linguists do not consider the Web a valid corpus for linguistic research, I agree with Cappelle (2005: xix-xxii) who sees the Web as useful source for authentic linguistic data. The central claim of Cappelle (2005) is that the language used on the Web is much more natural and authentic than in such corpora as BNC or MCE. He (Cappelle 2005: xix) stresses that the lack of editorial intervention in most cases makes the language on the Web more natural than the language of texts that have undergone substantial revisions before they go to press. Moreover, the Web is kept up-to-date with current usage, while corpora have been compiled at a specific point of time, e.g. BNC was composed between 1991 and 1994. The other good reasons for using the Web as a source for linguistic data are that there is a natural diversity of genre and the sheer size of the Web. This massive size ensures that a certain word or sequence of words which we do a search on is not found due to an accidental gap in the corpus. Still, there are certain drawbacks: as everybody can put on the Web whatever they like, the Web is often portrayed as “a vast pool of degraded language use” and “a far cry from standard, proper use” (Cappelle 2005: xix). Certainly, this “fabulous linguists’ playground” (Kilgariff and Grefenstette 2003: 33, cited in Cappelle 2005: xix) has to be treated with some caution. Nevertheless, at times I have wondered to this “linguists’ playground” during my analysis and the example sentences taken from the Web are labelled as WWW.

2.3 The Category of MEDIAL REGION

This section gives an overview of the MEDIAL REGION category. It discusses the possible network model developed for this complex category (following Langacker 1987,

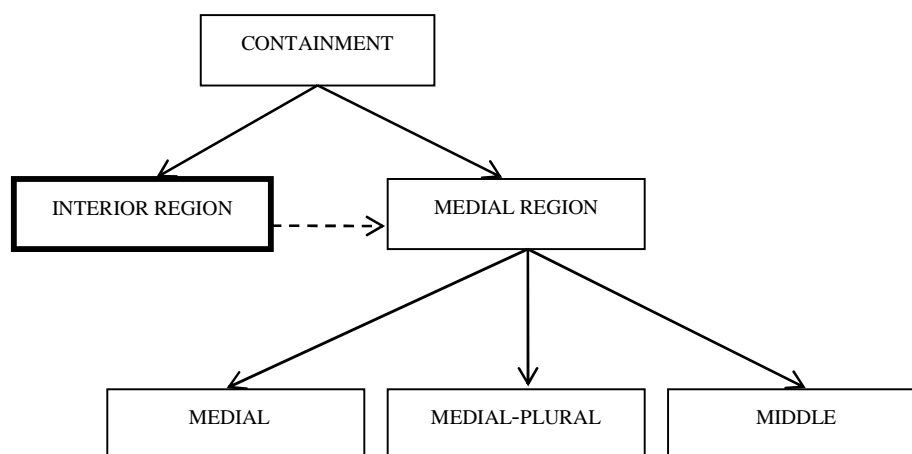
³⁴ I have mainly used the online version of EKSS for which anyone can subscribe at the web-page of Keelevara (www.keelevara.ee).

2008)³⁵ and the central hypothesis of the thesis that MEDIAL REGION is an elaboration of CONTAINMENT and an extension from INTERIOR REGION. It further describes the image schemas relevant in the semantic descriptions of English and Estonian MEDIAL REGION adpositions. It also considers some of the grammaticalization paths proposed for these adpositions as it is believed that their diachronic development influences their synchronic meaning relations.

2.3.1 Network of the Complex Category MEDIAL REGION

In the present thesis MEDIAL REGION is taken to denote a spatial scene where a trajector is located in a middle or intermediate position in relation to a single, dual, or multiple landmarks.³⁶ It is proposed that English and Estonian MEDIAL REGION adpositions form a **complex category**, with its prototype and central schema. The proposal to present MEDIAL REGION adpositions as a category forming a network is directly related to the central hypothesis of the thesis: **MEDIAL REGION is an elaboration of CONTAINMENT and extension of INTERIOR REGION**. The proposed network for the MEDIAL REGION category is depicted in Figure 6.

Figure 6. Network of the Complex Category MEDIAL REGION



³⁵ See section 1.4.2 and 1.4.3 for the discussion of Langacker's network model and other proposals put forward within the framework of cognitive semantics.

³⁶ See section 1.1.1 for the definition of *region*.

In addition to MEDIAL REGION, this network (Figure 6) involves other elements. One such important element is the **prototype**³⁷. It is here posited that the prototype of the central schema of CONTAINMENT is that of INTERIOR REGION, i.e. a spatial situation where the landmark is treated as a container having an INSIDE-REGION and the trajector is located at the INSIDE-REGION of that landmark (Svorou 1994: 235). The English preposition *in* and the Estonian interior local cases and adpositions *sees*, *sisse*, *seest* prototypically used express the CONTAINMENT schema. In my opinion, MEDIAL REGION can also be seen as an elaboration of the CONTAINMENT schema. At the same time, it is also posited that MEDIAL REGION is an **extension** of INTERIOR REGION. Both instantiate the general idea of containment and inclusion, but the MEDIAL REGION modifies certain aspects of the CONTAINMENT schema. Namely, MEDIAL REGION adds the constraint that the trajector has to be located in the middle or intermediate position with respect to a singular or plural landmark. Thus, all of the English and Estonian MEDIAL REGION adpositions have the additional specification of *medial position* as part of their semantics.

MEDIAL REGION itself has three further elaborations, corresponding to the labels MEDIAL, MEDIAL-PLURAL and MIDDLE³⁸. In each elaboration, the general schema for MEDIAL REGION is modified in specific ways: the **MEDIAL** location refers to a scene where the trajector is located in an intermediate position in relation to **two landmarks** (e.g. *I sat between Jo and Diana*); the **MEDIAL-PLURAL** location refers to a scene where the trajector is located in an intermediate position in relation to **more than two landmarks** (e.g. *There was a house among the trees*); the **MIDDLE** location refers to a scene where the trajector is located in a middle position in relation to a (usually) **single landmark** (e.g. *The table was in the middle of the room*). In the analysis part, the English and Estonian adpositions are described under these specific sub-groups: MEDIAL adpositions (*between*, *vahel*, *vahele*, *vahelt*), MEDIAL-PLURAL adpositions (*among*, *amongst*, *seas*, *sekka*, *seast*, *hulgas*, *hulka*, *hulgast*), and MIDDLE adpositions (*amid*, *amidst*, *in the middle of*, *in the centre of*, *keskel*, *keskele*, *keskelt*, *keset*). It should be pointed out that this category may differ cross-

³⁷ Langacker indicates the most prototypical or central members in the network by drawing these boxes with heavy lines (2008: 37).

³⁸ Although I am aware of the possible confusion that these labels might cause, it should be emphasised that it is not the name of the specific label that is important, but the idea that these adpositions form such distinct sub-groups. The term *MEDIAL REGION adpositions* is used throughout the thesis to include all of the adpositions studied, while the term *MEDIAL adpositions* refers specifically to *between*, *vahel*, *vahele*, *vahelt*.

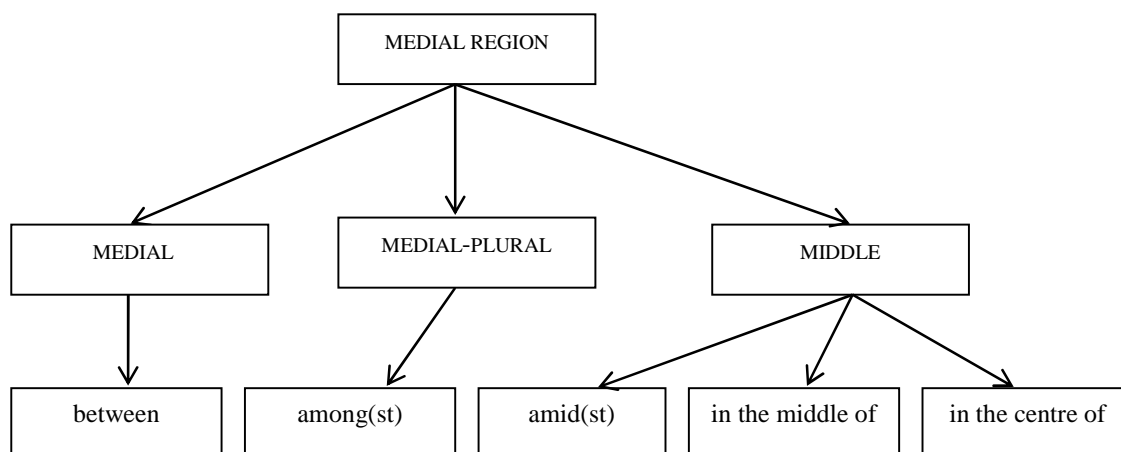
linguistically. For example, in Dutch, Hungarian, and Basque there are only two elaborations for the MEDIAL REGION category: that of MEDIAL-PLURAL and MIDDLE. Differently from, e.g. English, in these languages one and the same adposition expresses both the spatial situation when the trajector is located between two landmarks and when it is located between more than two landmarks.

For the purposes of the present study, the MEDIAL REGION category is described in greater detail both for English (a) and Estonian (b):

(a) English MEDIAL REGION Category

Figure 7 represents the network of English MEDIAL REGION adpositions, specifying how they relate to the three elaborations of the MEDIAL REGION category. The network presents only the prototypical or central uses of these adpositions³⁹. But as is the case with other spatial adpositions, polysemy is the norm and these English MEDIAL REGION adpositions also express other spatial relations besides those illustrated in this network; these are discussed later in sections 2.4–2.6.

Figure 7. English MEDIAL REGION Category



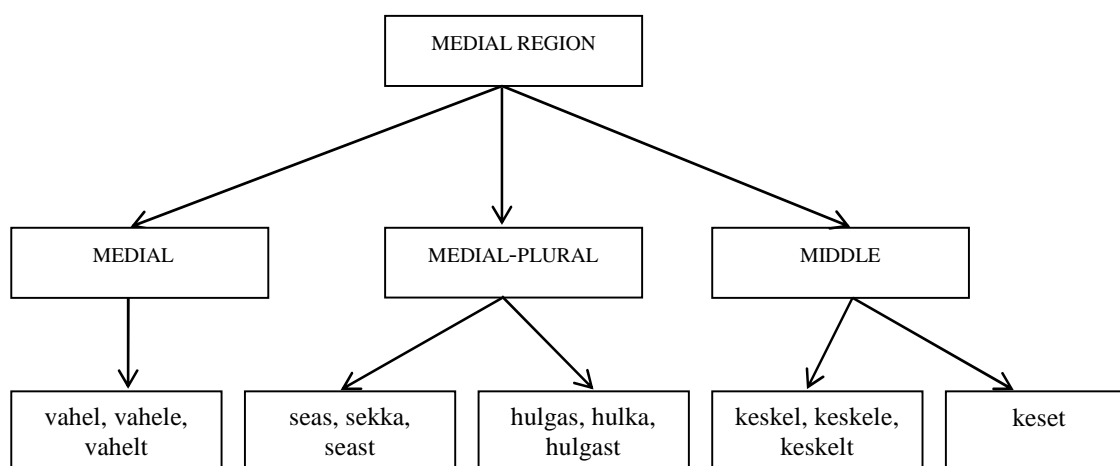
(b) Estonian MEDIAL REGION Category

Figure 8 represents the network of Estonian MEDIAL REGION adpositions. Similarly to the English network above, it specifies how this subset of Estonian spatial adpositions is

³⁹ The central or prototypical uses for the adpositions are based on the various dictionary entries and the results of the corpus analysis.

related to the three elaborations of MEDIAL REGION. Again, the network only presents the central meaning of these adpositions; other extensions are discussed later under the specific adpositions.

Figure 8. Estonian MEDIAL REGION Category



Positing such networks for the complex category of MEDIAL REGION has to do with the notion of **construal** discussed in section 1.3.1. It is claimed that MEDIAL REGION is related to a relatively specific spatial location, i.e. when describing something as *between*, *among*, *amid* or *in the middle of* something else, we are examining the scene rather closely and we construe it with comparatively high **specificity**. However, at the same time, this specificity can be seen as instantiating a more schematic relation – that of CONTAINMENT.

Having outlined the general characteristics of the MEDIAL REGION category, I will now turn to the image schemas related to this category, including the CONTAINMENT schema together with its entailments. Section 2.3.2 gives only an overview of the schemas, for specific examples how these schemas are expressed through English and Estonian MEDIAL REGION adpositions, see the analysis of specific adpositions.

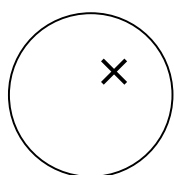
2.3.2 Image Schemas Related to MEDIAL REGION

One of the major construal operations described in section 1.3.1 were image schemas. These are described as schematized patterns of activity abstracted from everyday bodily experience (Johnson 1987, Langacker 2008). It should be once more emphasised that the diagrams and figures that are presented are not be identified as image schemas per

se (which are patterns of mental activity) but are merely intended to evoke these image schemas and suggest their nature (Langacker 2008: 32).

According to a number of cognitive linguists, our encounter with containment and boundedness is one of the most pervasive features of our bodily experience (Johnson 1987: 21, Lakoff 1987: 267, Langacker 1987: 225–228). The idea of containment is often presented visually as in Figure 9.

Figure 9. CONTAINMENT (Johnson 1987: 23)



Johnson (1987: 21) points out that the most experientially salient sense of boundedness is that of three-dimensional containment, i.e. being limited or held within some three-dimensional enclosure like a womb, a crib, or a room. At the same time, equally important is also two- and one-dimensional containment. Containment is directly linked to the physical *in-out* orientation which involves separation, differentiation, and enclosure (Johnson 1987: 22). The following five entailments or consequences proposed by Johnson (1987: 22) are relevant to the discussion of the CONTAINMENT schema: (i) the experience of containment typically involves protection from, or resistance to, external forces; (ii) containment also limits and restricts forces within the container; (iii) because of this restraint of forces, the contained object gets a relative fixity of location; (iv) this relative fixing of location within the container means that the contained object becomes either accessible or inaccessible to the view of some observer; (v) we experience transitivity of containment.

It is precisely in the light of such entailments that it is hypothesised MEDIAL REGION to be an elaboration of CONTAINMENT. Most of the English and Estonian MEDIAL REGION adpositions are used with landmarks that surround the trajector. These uses are in accordance with the entailments (i), (ii) and (iii); the fixity of location (iii) is especially relevant in case of *between* and *vahel* as will be seen later on in the analysis part. As an

example of the entailment (iv), consider the following English example sentence, where the bridge, the trajector, is inaccessible to the view of the observer:

10. *After a while, a stream develops on the right which you have to cross by the plank bridge hidden **among the trees** --; watch out because it's easily missed. (BNC)*

Another reason to consider MEDIAL REGION as an elaboration of CONTAINMENT is that many of the phrases employing these adpositions can be paraphrased with using either the interior local cases (in Estonian) or the adposition *in* (in English). Furthermore, in Estonian some of the MEDIAL REGION adpositions have very idiomatic uses (including verb particle constructions), where the English translation or paraphrase usually involves the preposition *in* (examples 11a–d). The following example sentences are taken from *EKSS*:

11. a) *Mitugi korvi valmis ta vilunud käte vahel.*
 many basket:PRT be-completed-PST:SG3 his skilful hands:GEN between
 ‘Many a basket was completed **in his skilful hands** (lit. between his skilful hands).’
- b) *Istume nelja seinä vahel.* [= toas]
 sit-PRS:PL1 four:GEN wall:GEN between
 ‘We are sitting **inside** (lit. between four walls)’
- c) *Taadil oli piip hammaste vahel* [= suus]
 old-man-ADE have-PST:SG3 pipe:NOM teeth:GEN between
 ‘The old man had a pipe **between his teeth**’ (i.e. in his mouth)
- d) *Tuleb seista järjekorras, ära trügi vahele!*
 must-PRS:SG2 stand-SUP line:INE do-not push-PRS:SG2 between
 ‘You must stand in the line, do not **push in**/jump the queue (lit. push between).’

Indeed, for the Estonian adpositions *hulgas* and *seas* (‘among’) *EKSS* even indicates a separate meaning group which is labelled as “inside” (examples 12a and 12b)

12. a) *Piima hulgas on vett.*
 milk:GEN among be-PRS:SG3 water:PRT
 ‘There is water **in** the milk.’
- b) *Selle kuldse nisu seas on palju koirohtu.*
 this:GEN golden:GEN wheat:GEN among be-PRS:SG3 a-lot-of wormwood:PRT
 ‘**In**/(?**among**) this golden wheat there is a lot of wormwood.’

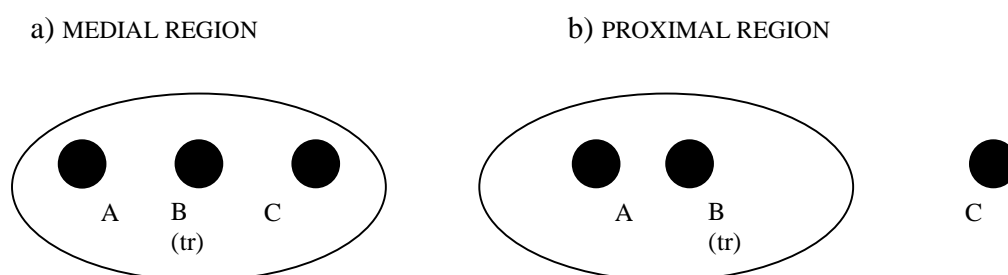
Further examples of how the MEDIAL REGION adpositions involve CONTAINMENT come from the domain of idioms and idiomatic phrases; e.g. example 13, where the (iii) elaboration of the CONTAINMENT schema (the fixity of location) is clearly instantiated:

13. ADM 1724 *I was **sandwiched between** two big men who joked over my head about how squashed they all were. (BNC)*

In English an even more specific MEDIAL location can be expressed with the lexical unit *in between*⁴⁰ – it clearly instantiates the CONTAINMENT schema. Last but not least, in English the complex prepositions *in the middle of* and *in the centre of* are much more frequent than *at the middle of* or *at the centre of*⁴¹. The hypothesis that MEDIAL REGION is an elaboration of CONTAINMENT finds support also in the grammaticalization of these adpositions⁴². Most importantly, the multiple LMs in MEDIAL REGION expressions have to be conceptualised as some sort of unitary bounded entity – they are taken to be spatially contiguous within our perceptual field, otherwise the use of these adpositions would not be felicitous. I would even go as far as to claim that the multiple landmarks form a container in which the trajector is located.

The image schema of NEAR-FAR alignment and PROXIMAL REGION, where the trajector and landmark are relatively close to each other, are also directly related to MEDIAL REGION adpositions. PROXIMAL REGION adpositions include, e.g. *near*, *beside*, *at*, *against*, *kõrval*, *lähedal*, *juures*, etc. The idea of *proximity* is important for both PROXIMAL and MEDIAL REGIONS: the trajector has to be close enough to the landmark(s), for either PROXIMAL or MEDIAL REGION adpositions to be felicitous (see Figure 10). In both of these cases, the conceptualizer takes the trajector and landmarks as one conceptual whole, depicted by an ellipsis in Figure 10. In case of MEDIAL REGION both of the landmarks have to be near to each other and the trajector, while in case of PROXIMAL REGION, only one landmark is taken to be close to the trajector.

Figure 10. MEDIAL REGION vs. PROXIMAL REGION



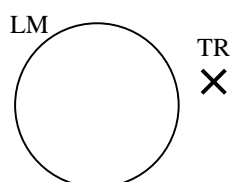
⁴⁰ This lexical unit can be either spelled as two separate words *in between* or as a single unit *inbetween*. The first variant is much more frequent: BNC gave 1115 instances for *in between* and only 10 for *inbetween*.

⁴¹ See p.23

⁴² See section 2.3.4.

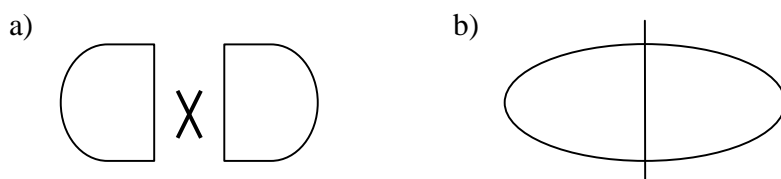
Besides INTERIORS, containers have other structural elements, such as a BOUNDARY and an EXTERIOR (Lakoff 1987: 272). In addition to being an extension of INTERIOR REGION, MEDIAL REGION is also related to the EXTERIOR REGION of entities and the OUT image schema (depicted in Figure 11). In case of EXTERIOR REGION the landmark is treated as a container and the trajector is located at the OUTSIDE-REGION of the landmark.

Figure 11. OUT (based on Johnson 1987: 32)



Another image schema connected to MEDIAL REGION adpositions is SPLITTING, represented in Figure 12. Among the English and Estonian MEDIAL REGION adpositions, SPLITTING can be most clearly seen in the semantics of *between* and *vahele*, *vahel*, *vahelt*, where the landmark has to be composed of two separate parts. In Figure 12a, the trajector is splitting up or separating the landmarks; alternatively, the trajector separating the landmarks may be represented as a separating line (Figure 12b).

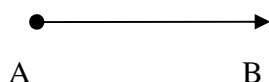
Figure 12. SPLITTING



An important image schema related to MEDIAL REGION and other adpositions in both English and Estonian is that of PATH. The bodily experience of this image schema is our own experience of motion. According to Lakoff (1987: 275) “every time we move anywhere there is a place we start from, a place we wind up at, a sequence of contiguous locations connecting the starting and ending points, and a direction”. In cognitive semantics, these structural elements carry the labels of SOURCE, GOAL, PATH, and

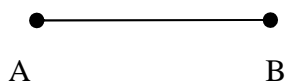
DIRECTION and can be represented as in Figure 13. **PATH** schema also pertains to Estonian adpositions that constitute three-member sets, e.g. *vahele-vahel-vahelt*, *kõrvale-kõrval-kõrvalt*, etc., where the lative member is connected to the **GOAL** element of this schema (represented by B in Figure 13), and the separative member to the **SOURCE** element (represented by A in Figure 13).

Figure 13. PATH (Johnson 1987: 28)



The **LINK** image schema is closely connected to the **PATH** schema. Again, Lakoff (1987: 274) and Johnson (1987: 117) stress the bodily experience of the most important link in our lives – that of the umbilical cord. Links in our spatial and temporal experience share the common structural elements of two entities and the link connecting them, which can be structured as in Figure 14.

Figure 14. LINK (Johnson 1987: 118)



According to Johnson (1987: 118) this very simple **LINK** schema makes possible also our perception of similarity. As he puts it:

Two or more objects are similar because they share some feature or features. Those shared features are their cognitive links in our understanding. Here, obviously we have a highly abstract notion of linkage, in which the ‘third thing’ that bind or relates two objects is a perceptual or logical feature. The **LINK** schema must be metaphorically interpreted to apply to abstract objects or connections, since there is no actual physical bond of the required sort to relate the objects. (Johnson 1987: 119)

The **LINK** schema is most directly connected to the **MEDIAL** and **MEDIAL-PLURAL** set of adpositions, e.g. *between*, *vahel*, *among*, *seas*, *hulgas*, both in the spatial and in the abstract domain. The adpositions *between* and *vahel*, *vahele*, *vahelt* exhibit an interesting contradiction, where, on the one hand, their meaning reflects the image schema of

SPLITTING, and, on the other hand, that of LINK(ING). It is argued that the central schema is still the same, i.e. a trajector located in the space between two landmarks, and that it is the nature of the trajector that determines whether the SPLITTING or LINK schema is instantiated.

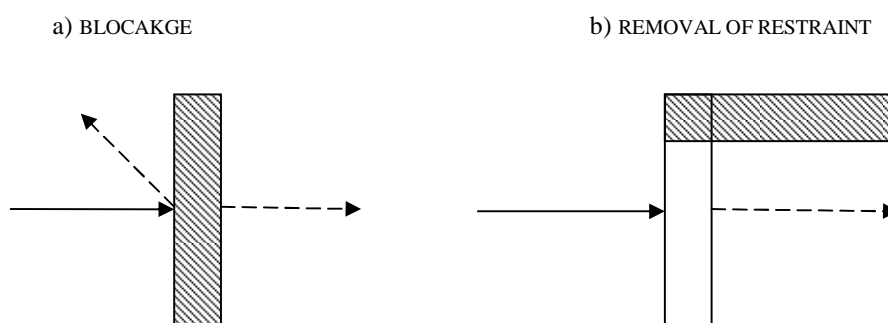
Another image schema related to PATH is that of SCALE. Johnson (1987: 122) proposes that although a scale is a modified path (cf. Figure 13 and Figure 15), there are important differences. One such difference is that scales have a normative character and the image schemas that arise from our concrete physical experience is extended to cover such abstract entities as numbers, properties, money, etc. (Johnson 1987: 123). This image schema is again instantiated in the uses of *between* and *vahel, vahele, vahelt*. It is believed here that the reason why the LINK and SCALE schema are instantiated only by *between* and *vahel, vahele, vahelt* is that these adpositions involve two LMs which correspond to the two structural elements in the general PATH schema.

Figure 15. SCALE (Johnson 1987: 121)



The next set of image schemas are related to our physical experience and the preconceptual gestalts of force (Johnson 1987: 42-48). Out of the numerous schemas based on forces, those of BLOCKAGE and REMOVAL OF RESTRAINT are the most relevant ones in the present analysis. The image schema of **BLOCKAGE** is represented in Figure 16a and it pertains to our everyday encounter of obstacles that block or resist our force. **REMOVAL OF RESTRAINT** accounts for our everyday experience of the removal of a barrier or the absence of some potential restraint. According to Johnson (1987: 47) the relevant schema is thus one that suggests an open way or path as in Figure 16b. These two images schemas pertain to the adpositions *between* and *vahel/le/lt*.

Figure 16. Force Gestalts: BLOCKAGE and REMOVAL OF RESTRAINT (Johnson 1987: 46–47)



In the light of the above discussion of these various image schemas, it should be emphasised that they are repeatedly extended metaphorically from the physical to the non-physical (Johnson 1987: 34). Thus, as will be demonstrated in the analysis of specific adpositions, the above image schemas related to MEDIAL REGION are figuratively elaborated and extended so that they allow the landmark and trajector roles to be filled by entities that are not strictly physical or spatial.

2.3.3 Grammaticalization of MEDIAL REGION Adpositions

Grammaticalization refers to the evolution of grammatical elements from lexical sources (Claudi, Bernd and Hünemeyer 1991, Hopper and Traugott 2003). During recent years there has been “cross-fertilization” of functional and cognitive approaches with diachronic perspectives (Svorou 2007: 738), which has given a deeper understanding of the semantic as well as formal aspects of adpositions. Svorou (2007: 740) has summarised the theoretical and empirical foundations for the theory of grammaticalization in the following way:

- a. Grammaticalization is a diachronic process, although it can be interpreted synchronically;
- b. Grammaticalization affects the morphosyntactic status of a lexical or grammatical form; forms/grams become phonologically eroded, their position within the sentence becomes gradually more fixed, and they lose in categoriality;

- c. Grammaticalization involves semantic generalization (*semantic bleaching*); forms tend to assume more general meanings, losing some of their semantic specificities while retaining the basic semantic schema. Such semantic generalization is seen as a precursor to morphosyntactic changes;
- d. Grammaticalization is a unidirectional process in that it leads from a “less grammatical” to a “more grammatical” unit but not vice versa.

Grammaticalization theory has also been effectively used in studying and describing the lexical and morphological development of Old Literary Estonian (Habicht 2001a) and Estonian and Finnish body part nouns (Ojutkangas 2000). Habicht (2000: 19) has pointed out that the formation of adpositions and adposition-based case endings has been regarded as a universal example of grammaticalization. Lehmann (1985, cited in Hopper and Traugott 1993: 110) has presented a cline of grammaticalization which has the following process: a substantive that expresses location and direction → secondary adposition → primary adposition → agglutinative affix → fusional affix. Estonian adpositions are mostly fossilized locative forms and originate from substantives with varying degrees of abstraction (Habicht 2000: 19). Habicht refers to the work of Diewald (1997, cited in Habicht 2000: 22) who has studied the grammaticalization of some German prepositions and has emphasised that the adpositions include elements with highly different degrees of grammaticalization. This also holds for Estonian, as Habicht (2000: 22) notes, and some of the adpositions studied by her are still in the initial phase of development (these include, for example, also the MEDIAL REGION adposition *keskel*). Actually, the majority of Estonian adpositions are still related to the fully meaningful substantives they have grammaticalized from (Habicht 2001a: 42-43). The typological study of various languages has revealed a number of general tendencies in grammaticalization. According to Svorou (1994: 64-109), there are two major sources of grammatical grams⁴³: nominal and verbal sources. Nominal sources include body parts, environmental landmarks, relational object parts, and abstract spatial notions.

⁴³ Svorou, in footnote 15 (1994: 216) states that the term *gram* was first used by Bybee (1986 cited in Svorou 1994) to refer to grammatical morphemes of languages. The abbreviated form of the term iconically reflects the typically small phonological morphemes as well as the fact that they are a product of evolution from larger units.

In Table 8, I have included the sources of grammaticalization paths for MEDIAL REGION spatial grams given by Svorou (1994).

Table 8. Nominal sources of MEDIAL REGION spatial grams (based on Svorou 1994: 256–257)

	Language	Spatial Gram	Nominal source
Body parts			
Waist	Ossetic	<i>astæy</i> “among, between”	<i>astæy</i> “waist”
Chest	Margi	<i>ár kátlá</i> “in the middle of”	<i>ár</i> “in” + <i>kátlú</i> “chest, middle”
Environmental landmarks			
Canyon	Papago	<i>ca:gi'D</i> “between”	<i>ca:gi'D</i> “canyon”
Object parts			
Middle	Bihari	<i>mājhē</i> “among, between, within”	~ <i>SKT mādhyā</i> “middle”
	Halia	<i>i gusuwna</i> “in the middle of”	<i>i</i> “in” + <i>gusuwna</i> “middle”
	Isl.Carib	<i>l-amídā</i> “in the middle of”	<i>l-</i> (POSS PRO) + <i>amídā</i> “middle”
	Karok	? <i>á:čip</i> “in the middle of”	? <i>á:čip</i> “middle, centre”
	Melan.Pid.	<i>nəməl loŋ</i> “in the middle of”	<i>nəməl</i> “middle” + <i>loŋ</i> “in, at”
	Bib. Hebr.	<i>baqéreb</i> “in the midst of”	<i>Qéreb</i> “inward part, midst”
	Persian	(<i>dar</i>) <i>miyān-e</i> “between, among”	(<i>dar</i> “in”) + <i>miyān-</i> “middle” + <i>e</i> (<i>ezafe</i>)
	English	<i>amid/amidst</i> < LME <i>amiddes</i> < 13c. <i>amide</i> < OE <i>on middrum; on midre</i>	
Abstract nouns			
Space	Basque	<i>artean</i> “between”	<i>arte</i> “interval” + <i>-an</i> (LOC)
		<i>bizartean</i> “between”	<i>bizarte</i> “interval” - <i>an</i>
	Bihari	<i>bica</i> “between, in”	~ <i>OIA vyacah</i> “wide space”
	Hungarian	<i>között</i> “between”	
		<i>közül</i> “from among”	<i>köz</i> “space in between”
		<i>köze</i> “to between”	<i>közep</i> “the middle of” < <i>köz</i>
		<i>közepén</i> “in the middle of”	“space in between” + <i>ep</i> (GEN)

This kind of survey table may be seen as an example data set against which English and Estonian MEDIAL REGION adpositions can be compared. As can be seen from this table⁴⁴, a MEDIAL REGION spatial gram has grammaticalized from a body part term in only two languages⁴⁵, while most others have evolved either from an object part denoting “middle” or from an abstract spatial noun “interval”, “space in between”, “wide space”. An interesting source of grammaticalization is that of the environmental landmark “canyon” in the language of Papago, where it also expresses the spatial relation of *between*. As Svorou points out (1994: 82), the motivation for the development of environmental landmark terms

⁴⁴ Svorou (1994) has based her study on a sample of 26 genetically and randomly selected languages, including one language isolate and one pidgin.

⁴⁵ Cf. the INTERIOR REGION for which Svorou (1994: 257) lists 6 different body parts (*heart, stomach, blood, mouth, neck, eye*) for 9 different languages.

and body part terms into spatial grams stems both from the landmarks' location relative to other such entities and from their use in the cultural environment.

In Table 9, I have presented the possible grammaticalization sources for the English and Estonian MEDIAL REGION adpositions studied in the present thesis. Of course, this table should be taken with a pinch of salt, because unfortunately we do not have, especially in the case of Estonian, reliable enough historical sources for positing such grammaticalization paths with absolute certainty.

Table 9. Nominal Sources of English and Estonian MEDIAL REGION adpositions⁴⁶

	Language	Spatial Gram	Nominal source
Body parts			
?Groin	Estonian	<i>kesk, keset, keskel</i> 'in the middle of'	?Mordvin <i>késkä</i> 'groin'
Object parts			
Middle	Estonian	<i>kesk, keset, keskel</i> 'in the middle of'	<i>kesk, kese</i> 'middle, centre'
	English	<i>amid</i> 'in the middle of, among'	OE <i>on middan</i> 'in the middle'
Abstract nouns			
Space	Estonian	<i>vahel</i> 'between'	<i>vahe</i> 'gap, interval'
Other			
Crowd	Estonian	<i>seltsis</i> 'among'	<i>selts</i> 'company'
		<i>kambas</i> 'among'	<i>kamp</i> 'company, crowd'
		<i>killas</i> 'among'	<i>kild</i> 'company'
	Estonian	<i>hulgas</i> 'among'	<i>hulk</i> 'amount' < Germanic <i>folk</i> 'people'
		<i>seas</i> 'among'	* <i>sega</i>
	English	<i>among</i>	OE <i>on gemang</i> 'in a crowd' < 12 th C <i>onmong, amang, among</i>
Number	English	<i>between</i>	OE <i>betweonum</i> < <i>bi-</i> 'by' + <i>tweonum</i> dat. pl. of * <i>tweon</i> 'two each' (cf. Goth. <i>tweih-nai</i> 'two each')

Among English and Estonian MEDIAL REGION adpositions, there is no clear case of grammaticalization from a body part term. The closest instance would be that of Estonian *keskel, keskele, keskelt, keset*, which according to Habicht (2000: 29-30) have the noun *kesk* ('middle') as the source. The noun itself is no longer used on its own in present-day Estonian and mainly appears in compounds where it has retained the meaning of 'in some way positioned in the middle or central' (EKSS), e.g. *kesköö* 'midnight' and *keskküte* 'central heating'. In connection to these forms, Habicht (2000: 29) also discusses the

⁴⁶ Data for English are taken from *OED* and an online etymological dictionary (<http://www.etymonline.com/>); data for Estonian is based on Habicht (2000), Mägiste (1983), Raun (1982), and Wiedemann (1973).

prepositional use of *kesk*, which can be even seen in present-day Estonian (example 14). But as noted in *EKSS*, *kesk* is mainly used in literary language and the preposition *keset* is used instead.

14. *Laud* *on* *kesk* *tuba.*
 table:NOM be-PRS:SG3 in the middle of room:PRT
 ‘The table is in the middle of the room.’

As to the possible source of grammaticalization of the noun *kesk* itself, it could be the Mordvin form *késkä* (Raun 1982), which according to Häkkinen (2004) means ‘kupeet, ruumiin keskikohta’ (groin, centre of the room). It may very well be that the proposition about these Estonian adpositions having developed from a body part term meaning groin is a bit far-fetched. However, I believe it could be claimed with reasonable certainty that these adpositions have grammaticalized from the relational noun ‘kesk, kese’ which denotes the medial part or the centre of an object. However, the cross-linguistic tendency of MEDIAL REGION spatial adpositions having grammaticalized from body part terms (Svorou 1994) can be seen, to a certain extent, in the use of Estonian body part *süda* ‘heart’. According to *EKSS*, *süda* can be used to denote the location at the central part of something (example 15):

15. *Asume* *Mulgimaa* *südamas.*
 be-located:PL1 Mulgimaa heart:INE
 ‘We are in the centre of Mulgimaa.’ (lit. ‘in the heart of Mulgimaa’)

This use is also attested in the temporal domain, e.g. such Estonian expressions as *südaööl* (synonym for *keskööl* ‘at midnight’) and *südasuvel* (‘midsummer’).

Among the possible nominal sources of English and Estonian MEDIAL REGION adpositions, the English *between* presents an interesting case⁴⁷. It has already from the beginning involved the meaning of ‘two’ > **tweon* ‘two each’. Thus, it could be expected that the English *between* is much more restricted in this sense than Estonian *vahel*, *vahele*, *vahelt*.⁴⁸ Most of the MEDIAL-PLURAL adpositions in both languages have evolved from a word meaning something like a ‘crowd’ or another such group of people. MIDDLE adpositions have mainly grammaticalized from object parts denoting the centre.

⁴⁷ Cf. also the German adposition *zwischen*.

⁴⁸ See section 2.3.1 and chapter 3, for the results of corpus analysis and experimental findings related to this anticipation.

This section provided a general description of the MEDIAL REGION category in both English and Estonian. It presented the various image schemas believed to be related to the semantics of these adpositions and looked at some of the possible grammaticalization sources. The following three sections provide a detailed semantic analysis of the three main groups of MEDIAL REGION adpositions.

The main aim of this analysis is to show that by positing one central schema for each group of MEDIAL REGION adpositions, a very large number of uses can be adequately described with them in conjunction with the more basic image schemas depicted above in section 2.3.2. For each group of adpositions I have proposed a network model according to Langacker (1987, 1990, 2000, 2008). Each such network includes a prototype for these categories. The central or prototypical uses of the adpositions are based on the various dictionary entries and the results of the corpus analysis; I also refer to the experimental findings described in detail in chapter 3 where relevant. Under each adpositions group I exemplify both the prototypical or more central uses of these adpositions and other elaborations, where the central schema is modified.

The central or prototypical uses for the adpositions are based on the various dictionary entries and the results of the corpus analysis; they were also and on experimental findings.

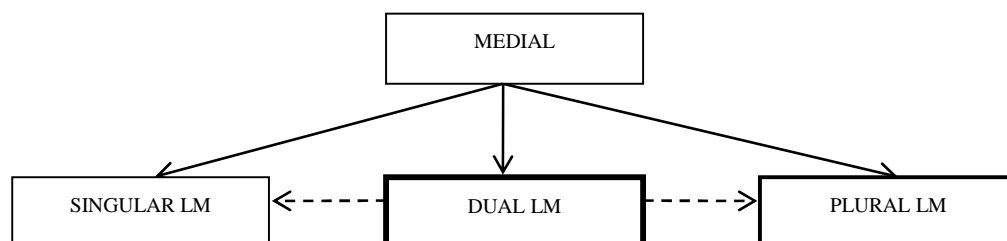
2.4 The MEDIAL Group: *between, vahel, vahele, vahelt*

The first group of MEDIAL REGION adpositions to be described is that of the MEDIAL adpositions in English and Estonian, i.e. such adpositions which are used to express a spatial location where the trajector is located in an intermediate position in relation to two landmarks. These two landmarks may be two separate objects, two separate parts of an object, or two sets of multiple objects. Grammatically, these may be expressed with four possibilities: singular + singular, singular + plural, plural + singular, plural + plural. The English dataset includes the prepositions *between* and the Estonian dataset the postpositions *vahel, vahele, vahelt*. Both *between* and *vahel* are the most frequent adpositions within the whole category of MEDIAL REGION adpositions⁴⁹. Both the English and Estonian MEDIAL adpositions form a complex category depicted in figure 17. This category is in turn related

⁴⁹ See Appendix 1 for the general description of the analysed corpus data.

to the more general schema of CONTAINMENT; the reasons why to consider such adpositions as expressing inclusion and containment, were given above in section 2.3.2.

Figure 17. Network of MEDIAL adpositions



This network highlights the fact that this subset of MEDIAL REGION adpositions can be abstractly characterized with one and the same schema, labelled as **MEDIAL**. Furthermore, it can be seen that the central schema of the MEDIAL category adpositions has three elaborations, one being the **prototype**. The elaboration considered the prototype (drawn with the most heavy line) in this network is the case when there are two landmarks or two sets of landmarks, i.e. the landmark is dual. The claim that the uses of these adpositions used with a dual landmark are the prototypical ones is supported by the corpus analysis.

Table 10 and 11 present the results of the corpus analysis carried out with English and Estonian MEDIAL adpositions⁵⁰. Table 10 shows the precise number of instances of these adpositions with dual, uniplex and multiplex landmarks in the spatial, temporal, and abstract domains; Table 11 expresses the same data as percentages. Here and elsewhere it was felt necessary to include both a table containing the exact numbers of instances as well as a table where the same data is expressed as proportions. The total number of instances analysed for each adposition varies and it is believed that presenting the data as proportions should make the comparison more explicit. In such tables (e.g. Table 10) the cells in the column titled *Total* indicate the total number of occurrences of the adpositions in my corpus sample; the cells for other columns indicate the number of occurrences of these adpositions for the respective category (e.g. singular, dual, plural for the quantity of landmarks). The label *not applicable* refers to such instances, where the determination of the quantity of the landmark was not possible. For English such instances were the fixed

⁵⁰ See Appendix 1 for the general overview of the corpus data.

phrases *in between* and the use of *between* as an adverb; for the Estonian dataset, these instances involved using *vahel*, *vahelt*, *vahele* as adverbs and phrasal verbs like *vahele jääma*, *vahele jätma*, *vahele võtma*.⁵¹ In all of these cases, there is no overt landmark.

Table 10. MEDIAL adpositions: quantity of landmarks

	singular	dual	plural	not applicable	TOTAL
between	3	908	279	12	1202
vahel	22	408	249	268	947
vahele	3	18	7	23	51
vahelt	13	2	31	3	49

Table 11. MEDIAL adpositions: quantity of landmarks (proportions)

	singular	dual	plural	not applicable	TOTAL
between	0.2%	75.5%	23.2%	1.0%	100%
vahel	2.3%	43.1%	26.3%	28.3%	100%
vahele	5.9%	35.3%	13.7%	45.1%	100%
vahelt	26.5%	4.1%	63.3%	6.1%	100%

As can be seen from these tables, the majority of the MEDIAL adpositions are considerably more often used with a dual landmark than with a plural or a singular one. The percentage for *between* is around 80; for *vahel*, however, this figure is only around 40. Nevertheless, I would still claim that the prototype for Estonian MEDIAL adpositions involves also the situation where the landmark is dual. This is because the adverbial use of Estonian *vahel* ‘sometimes, occasionally’ (example 16) can also be conceptualised as involving a dual landmark. The two landmarks involved here are that of “always” and “never”. *Sometimes* is neither, it is somewhere **between** the two extremes.

16. *Käisime vahel kinos.*
 go-PST:PL1 sometimes movies:INE
 ‘We **sometimes** went to the movies’.

Thus, when we add the number of instances of *vahel* used as an adverb to the number of instances when it is used with a dual landmark, the total is 676 instances (71.4%). The number of instances and proportions in Tables 10 and 11 provide, in my

⁵¹ When I conducted a pilot study of the corpus, I did not determine that there should be a space before and after the word (e.g. *_vahel_*) in the search bar of the MCE. Thus, I ended up getting such entrenched instances like *muuhulgas*, *muuseas*, *keskeltläbi*, *kahevahel*, *omavahel*, *vahetevahel*. Later on, this oversight was corrected and all of the Estonian queries were of the sort *_X_*.

opinion, reliable enough support to postulate that the prototype for both the English and Estonian MEDIAL adpositions studied is expressing such a relation where the trajector is located in the intermediate position with respect to a dual landmark. Further support comes from the experimental findings, where it is shown that the use of *between* and *vahel* decreases considerable when there are more than two landmarks in a spatial scene.⁵² This central schema is presented in Figure 18.

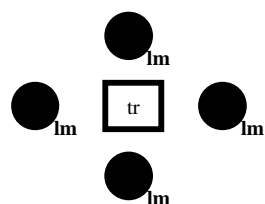
Figure 18. MEDIAL: ‘Trajector located in the intermediate position of two landmarks’



In addition to the prototype, the other typical elaboration of MEDIAL category is the use of MEDIAL adpositions with a plural landmark (depicted in Figure 19). In comparison with the third elaboration, where the landmark is singular, the use of *between* and *vahel* with a plural landmark is considerably more frequent (Tables 10 and 11). Hence, I have emphasised the relatively frequent use of these adpositions with a plural landmark by making the appropriate box thicker than that of the uses with a singular landmark in Figure 17, but at the same time less thicker than the most typical use with dual landmarks (see Langacker 2008: 37, 226 for different levels of centrality or prototypicality). However, it should be pointed out that the table only represents the grammatical coding of the landmarks and if taken conceptually, these plural and singular landmarks are quite often actually dual. This issue will be discussed in more detail under the corresponding elaborations.

⁵² See chapter 3 for the discussion of experimental findings.

Figure 19. MEDIAL: ‘Trajector located in the intermediate position of a plural landmark’



With respect to the use of *between* and *vahel* with a plural landmark, an important difference between the uses of such adpositions as *among*, *seas*, *hulgas* should be made right from the start. Although apparently synonymous as to the quantity of landmarks, these different sets of adpositions construe the scene differently – MEDIAL PLURAL adpositions (*among*, *seas*, *hulgas*) take the landmark to be a unitary bounded entity or a group that surrounds the trajector; with MEDIAL adpositions (*between*, *vahel*) the separateness and individual nature of the surrounding landmarks is emphasised.

It is interesting to look at the uses of *between* and *vahel* in the spatial sub-domain. In Table 12, the exact number of instances of *between* and *vahel* used in the spatial domain with either a singular, dual or plural landmark is given; Table 13 expresses the same data in percentages.

Table 12. MEDIAL adpositions: quantity of landmarks in the spatial domain

	singular	dual	plural	not applicable	TOTAL
between	1	311	168	5	485
vahel	22	78	110	3	213

Table 13. MEDIAL adpositions: quantity of landmarks in the spatial domain (proportions)

	singular	dual	plural	not applicable	TOTAL
between	0.2%	64.1%	34.6%	1.0%	100%
vahel	10.3%	36.6%	51.6%	1.4%	100%

From Tables 12 and 13 it can be concluded that *between*, compared to *vahel*, is much more restricted in its spatial use: in about 65% of the cases it requires its landmark to be dual. At the same time, Estonian *vahel* is actually used more with plural than dual

landmarks in the spatial domain according to my data. This might, in part, be explained by grammaticalization.⁵³

What follows is a more detailed analyses of the different uses of English and Estonian MEDIAL adpositions and how these instantiate both the central schema and its various elaborations.

(i) The central MEDIAL schema: ‘Trajector located in the intermediate position of a dual landmark’

The uses of MEDIAL adpositions can be roughly divided into two: those that are related to the SPLITTING (Figure 12), BLOCKAGE and REMOVAL OF RESTRAINT image schemas (Figure 16), and those that are related to the LINK image schema (Figure 14). The instantiation of these schemas together with the central MEDIAL schema (Figure 18) usually depends on the type of a trajector. Examples 17a and 18a illustrate the use of MEDIAL adpositions which instantiate the SPLITTING image schema, examples 17b and 18b instantiate the LINK schema:

17. a) A2X 406 *Far to the East, a young man emerges dripping from the river Neisse on the border **between** East Germany and Poland.* (BNC)
 b) CRB 3317 *President Mitterrand inaugurated France's high-speed train service **between** Paris and Lille, soon to be extended to the Channel tunnel.* (BNC)
18. a) *Moskvale polnud enam vaja puhverriiki Venemaa*
 Moscow:ALL not anymore need-SUP buffer-state:PRT Russia:GEN
ja Hiina vahel. (MCE)
 and China:GEN between
 ‘Moscow no longer needs a buffer state between Russia and China.’
- b) *Tallinna ja Tartu vahel sõidab jõulurong.* (MCE)
 Tallinn:GEN and Tartu:GEN between run-PRS:SG3 Christmas-train:NOM
 ‘There is a Christmas train running between Tallinn and Tartu.’

Here, the trajectors in (a) sentences, *border*⁵⁴ and *state*, are like other similar entities which are used together with MEDIAL adpositions to instantiate the images of SPLITTING and BLOCKAGE. These trajectors separate the two landmarks, in the above sentences different countries. However, in (b) sentences, the trajectors, *train* and *train service*, are of the LINKING type – instead of separating these landmarks (the different cities), they unit them. The same central division of the uses of MEDIAL adpositions also holds in the abstract domain, where *between* and *vahel* are used to express different types

⁵³ Nevertheless, see the also the experimental findings discussed in chapter 3.

⁵⁴ Although nowadays there are no actual physical borders between the countries within the Schengen area, in international politics the concept of borderlines is still and continues to be very important.

of relationships between entities. Again, whether the SPLITTING (examples 19a and 20a) or the LINK schema (examples 19b and 20b) is instantiated together with the central MEDIAL schema depends on the type of the trajector:

19. a) AAK 182 *The West German Government honoured him for his notable work in promoting friendship **between** the two countries.* (BNC)
 b) F9D 96 ... *a degree of diplomacy is necessary for the job, as much of it is likely to be spent resolving various forms of disagreement **between** client and agency.* (BNC)
20. a) Noorte **vahel** tekib armastus. (EKSS)
 youngsters:GEN between develop-PRS:SG3 love:NOM
 ‘Love develops **between** youngsters.’
 b) Peetri ja Mardi **vahel** hõõgus vana vaen. (EKSS)
 Peter:GEN and Mart:GEN between glow-PST:SG3 old:NOM feud:NOM
 ‘There was an old feud **between** Peter and Mart.’ (lit. ‘An old feud glowed between Peter and Mart.’)

In other cases, determining whether the specific image schema instantiated is that of SPLITTING or LINKING is not as clear. In these cases the truth probably lies somewhere between, as in example 21:

21. Vägede väljaviimise lepingu sõlmimine Eesti ja
 armed-forces:GEN pulling-out:GEN treaty signing:NOM Estonia:GEN and
Venemaa **vahel** oleks Eestile väga kahjulik.
 Russia:GEN between be-COND Estonia:ALL very damaging
 ‘The signing of a treaty **between** Estonia and Russia about pulling out the armed forces would be very damaging for Estonia.’

The most common landmarks that occur with *between* and *vahel* in these uses are *agreement*, *discussion*, *war*, *fight*, *disagreement*, etc.

Other abstract uses of MEDIAL adpositions form distinct groups. A very common group of uses is presented in examples 22 and 23a–b, where the MEDIAL adpositions are used when comparing entities:

22. A19 1520 *The research should help quantify the differences **between** older and younger drivers.* (BNC)
23. a) Kaksikute **vahel** oli võimatu vahet teha. (EKSS)
 twins:GEN between be-PST:SG3 impossible difference:PRT make-SUP
 ‘It was impossible to tell the difference between the twins.’
 b) Unistuse ja tegelikkuse **vahel** laiutas tohtu
 dream:GEN and reality:GEN between sprawl-PST:SG3 enormous
kuristik. (EKSS)
 abyss:NOM
 ‘There was an enormous gap **between** the dream and the reality.’

In these examples, a common trajector is either a *difference* or a *gap* that is abstractly located between the two landmarks. When there is no difference between certain

entities, the two landmarks in Figure 18 would be so close together that the trajector, i.e. the difference, would not be seen; on the other hand, when there is a big difference or gap between something, the two landmarks would be farther away from each other and the gap between these landmarks would be the trajector, i.e. the huge difference.

Another group of abstract uses of the MEDIAL adpositions are when these adpositions express making choices (examples 24 and 25):

24. A08 461 *Do I have to choose **between** goat's cheese and chocolate cake?* (BNC)
 25. *Meil on valida kahe võimaluse vahel.* (EKSS)
 we:ALL be-PRS:SG3 choose-SUP two:GEN possibilities:GEN between
 'We can choose between the **two possibilities**.'

In the above examples (24 and 25) the entities that we choose between are the two landmarks. The trajector may be abstractly thought of as the person who has to make the choice or the event of choosing. The people making the choices are sort of positioned between these two landmarks, one is on the one side and the other on the other side, and they mentally pick out the one they like. Here again another prominent image schema is that of SPLITTING (Figure 12): you have to separate the entities you like and wish to choose from those that you dislike or are less appealing to you. To push the image even further, you pick out the entities you choose and separate them from the rest. Thus, such picking out or choosing between entities, instantiates the general schema of containment; the entities you choose from collectively form a unitary bounded entity. In English, for example, there are the idioms like to get *caught between a rock and a hard place* and to be *between the devil and the deep blue sea*, which are used when you have to make a difficult decision or choose between two things that are equally unpleasant.

In relation to Estonian, a further parallel may be drawn with such phrases as *välja valima* (lit. 'choose out', 'pick out'). An interesting case is that of *välja jätma* 'leave out' and *vahelle jätma* (lit. 'leave between', 'skip, omit') (examples 26a–b). I would postulate that while as we leave something out from something else (*välja jätma*), then the OUT schema is instantiated (Figure 11), but when we skip something (*vahelle jätma*) then there is still CONTAINMENT. The part skipped is contained in the space between the last paragraph that was read and the next paragraph to be read.

26. a) *Raamatust on osa asju välja jäetud.* (WWW)
 book:ELA be-PRS:SG3 some:PRT things:PRT out leave-PST:PCPL
 ‘Some of the things have been **left out** from the book.’
- b) *Jätab lugedes osa lõike vahele.* (EKSS)
 leave-PRS:SG3 read-PRS:PCPL some:PRT paragraphs:PRT between
 ‘When reading, he/she **skips** some of the paragraphs.’ (lit. ‘leave between’)

The group of uses connected to choosing is closely related to another group – when *between* and *vahel* are used for dividing and sharing (examples 27a-b and 28):

27. a) AJX 521 *If twins are borne, both with a disability, then the sum insured will be divided equally **between them**.* (BNC)
 b) *We drank a bottle of wine **between us**.* (OED)
28. *Toit jagati võrdselt meie vahel.* (EKSS)
 food:NOM divide-PST:IMP equally our:GEN between
 ‘The food was equally divided **between us**.’

In such uses, there are again two groups of landmarks and the trajector is usually the entity that is being shared or divided between the two landmarks. At the initial stage of sharing, the trajector is abstractly located between the two landmarks and in the course of dividing, each appropriate part of the trajector is moved closer to the corresponding landmark, until the appropriate part is contained in the landmark. Example 27b is an idiomatic usage of *between*, the Estonian translational counterpart of which is usually *peale* (‘Jõime kahe peale pudeli veini ära’). Again, this group of uses instantiates also the SPLITTING image schema (Figure 12). In this case it is the trajector that is split up and divided between the two landmarks.

One of the final important groups of uses to be discussed here involves the use of MEDIAL adpositions to express a point along a scale from one amount, weight, distance, etc. to another (examples 29 and 30):

29. *It weighted **between ten and nine kilos**.* (OED)
30. *Palk oli korralik, 5000-8000 krooni vahel.* (EKSS)
 pay:NOM be-PST:SG3 decent 5000-8000 kroons:GEN between
 ‘The pay was decent, **between 5000 and 8000 kroons**.’

This use of MEDIAL adpositions is directly related to the SCALE image schema (Figure 15). The two landmarks are the two points on a scale and the trajector, in the example 29 *it* and in example 30 *the pay*, is fixed on some point on this scale between the two landmark points. This group of uses is, on the one hand, approximate, because we do not specify the exact weight or the size of the pay, but on the other hand, the two points do serve as specifying the range. I propose that the point held by the trajector on this scale is

more or less at the equivalent distance from the two other points, otherwise we would use the adposition *around* (in Estonian *umbes*).⁵⁵ That is, when the pay in example 30 was, for instance, 5500 kroons, then I would not use the adposition *between*; instead I would say: ‘They pay was around 5000 kroons.’.

The central MEDIAL schema (Figure 18) also holds in the temporal domain. Examples 31 and 32 instantiate these uses of *between* and *vahel* respectively:

31. ARC 68 *The High School at Cardiff, at the time when I attended it, **between** 1923 and 1928, was indeed an excellent one.* (BNC)
32. *Tulen homme kella kümne ja üheteistkümne vahel.*
 come-PRS:SG1 tomorrow o'clock ten:GEN and eleven:GEN between
 ‘I am coming tomorrow **between** ten and eleven o'clock.’

In addition to years and times, other common landmarks in the temporal domain are days, dates, months, the start and finish of certain activities, etc. Here, the two landmarks are the two time points and the trajector is the time interval that is between these two points. This use of MEDIAL adpositions can, again, be either approximate, as in the Estonian example 32, where the specific time is not given although the time range is given, or indicate the specific time interval, as in the English example 31, where the trajector covers all of the intermediate years between 1923 and 1928. This approximate temporal use of MEDIAL adpositions is similar to the use of these adpositions to express a point along a scale (examples 29 and 30).

(ii) Elaborations

As was noted above, the most important elaboration of the central MEDIAL schema, which holds for both English and Estonian, is when *between*, *vahel*, *vahela*, *vahelt* are used with a plural landmark. The other elaboration, i.e. when these MEDIAL adpositions are used with a singular landmark is far less common. The Estonian dataset, furthermore, includes the lative and separative forms of the locative adposition *vahel* – *vahela* and *vahelt*. Since the interrelationships between these different forms are not clear and merit a separate study, these adpositions are here simply treated as elaborations of the central schema. It should be stressed that all of the three members are tightly connected, but the exact nature of their

⁵⁵ However, the experimental findings presented in chapter 3 indicated that the centrality of the landmark did not show any specific effect for the use of *between* and *vahel* in the conducted experiment.

relationship, e.g. should one member be considered the prototype and the other members as either elaborations or extensions, is yet to be determined.

(a) ‘Trajector located in the intermediate position of a plural landmark’

Although this elaboration is seemingly similar to the elaboration of the category MEDIAL-PLURAL (see section 2.5), there are important differences. As mentioned above, the central proposition is that MEDIAL-PLURAL adpositions, e.g. *among*, *seas*, *hulgas* take plural landmarks that are conceptualised as a group and a unitary entity; MEDIAL adpositions, however, take plural landmarks that are taken to be as separate, individual entities. Furthermore, there seems to be a restriction that, although *between*, *vahel*, *vahele*, *vahelt* can be used with more than two landmarks, there cannot be too many of them.⁵⁶ Examples 33 and 34 instantiate this elaboration, which was depicted above in Figure 19:

33. AD9 1688 *Do you see the pool **between** the trees?* (BNC)
 34. *Ta on siinsamas siindinud ja kasvanud*
 he:NOM be-PRS:SG3 right-here born-PST:PCPL and grow-PST:PCPL
kartulipõldude vahel. (MCE)
 potatoe-fields:GEN between
 ‘He was born and grew up right here, **between** the potato fields.’

In both English and Estonian, these plural landmarks *trees* and *potato fields* cannot be used with a MEDIAL-PLURAL adposition in these contexts without a slight meaning change. Although in English, both *between the trees* and *among the trees* are attested (BNC gave 51 solutions with *between* and 96 with *among*), it is proposed that these adpositions construe the same situations differently. *Among* implies the idea of being surrounded by the trees – the trees form a unitary bounded entity; *between* implies the idea of separateness and the emphasis is on the individual character of the entities. Differently from *among*, *between* and *vahel*, *vahelt* are commonly used with perception verbs, like *see* and *be visible*. When something can be seen between the trees, e.g. a pool or the sea, we do not see the whole objects but only parts of it as they are visible between each separate tree. Furthermore, in Estonian there is even a stronger meaning difference between using MEDIAL and MEDIAL-PLURAL adpositions with one and the same plural landmark. We can use the expression *puude vahel* with such trajectors as people, cars or the sea, but *puude*

⁵⁶ Reference is here made to the experimental findings given in chapter 3, where *between* and *vahel* were mostly used with two landmarks and only a very small number of participants used these adpositions with three or six landmarks.

seas, *puude hulgas*⁵⁷ is predominantly used when we talk about, for instance, an ash growing among other trees.

In the corpus I also coded the uses of MEDIAL adpositions with body parts as plural. Nevertheless, in most cases these can be conceptualised as dual, as in examples 35 and 36:

35. H9H 2754 `Yes, it does have to stop,'; he hissed **between** *clenched teeth*. (BNC)
 36. *Põlvede vahel hoidis sõdurike vintpüssi*. (MCE)
 knees:GEN between hold-PST:SG3 soldier rifle:PRT
 'The soldier held a rifle **between** his knees.'

In example 35, the plural *teeth* can be conceptualised as dual; when somebody has something between their teeth or hisses something between their teeth, the grammatically plural landmarks can be actually thought of as two sets of landmarks, i.e. two rows of teeth and not just teeth in plural⁵⁸. In the English dataset, the only such instances where a plural body part could be conceptualised as dual, were *between the teeth*. The Estonian dataset included other examples like *õlgade vahel* 'between shoulders', *põlvede vahel* 'between knees', *käppade vahel* 'between paws', *käte vahel* 'between hands'⁵⁹, *jalgade vahel* 'between legs', *kõrvade vahel* 'between ears', and the idiom *kahe silma vahele jääma* lit. 'stay between the two eyes'⁶⁰. Indeed, considering such sets of landmarks as plural would be odd, because humans normally have two of these body parts and when we talk about them in plural, we mean both of them and not more. Thus, if we also consider these instances as involving a dual landmark, the proportion of the total number of instances where MEDIAL adpositions are used with a dual landmark is even bigger and gives stronger ground for positing prototype status for this use.

Other plural landmarks which could be conceptualised as dual, involve instances as those in examples 37 and 38:

⁵⁷ For a comparison, Google gave 8 600 results for *puude vahel*, 162 for *puude hulgas* and 99 for *puude seas*.

⁵⁸ Of course, an alternative for hissing something between the teeth, can actually be that the sound emits through the gaps between individual teeth, e.g. when somebody has lost a tooth or two during a hockey or boxing match. But I presume that in majority of cases, when we say or hiss something between the teeth, the sound comes out from the gap between the two rows of teeth.

⁵⁹ Interestingly, in English, for example, the usual translation counterpart for *olin tema käte vahel* is 'I was in his/her arms', which can be taken as further proof for the hypothesis that MEDIAL REGION is an instantiation of CONTAINMENT.

⁶⁰ English idioms that contain the MEDIAL REGION adposition *between* and body parts are *have nothing between the ears*, *hit sb (right) between the eyes*, *with your tail between your legs*.

37. CEU 1060 *Masklin was just ahead of the other two as they raced up the aisle **between the rows of humans.*** (BNC)
38. *Jaapani teadlased töötavad välja humanoidrobotit, mis Japanese scientists:NOM work-PRS:PL3 out humanoid-robot:PRT that liigub kaubamajas riiulite vahel ringi.* (MCE)
 move-PRS:SG3 departmentstore:INE shelves:GEN between around
 ‘The Japanese scientists are working out a humanoid robot that moves around between the shelves in a department store.’

These landmarks, *rows* and *shelves* can be thought of as forming two sets of landmarks; when you are moving between the rows, then in any one time point you are actually moving between *two rows* of humans. The same is with shelves; when in total you may move around between any numbers of shelves, at any one instance you are between two shelves. While in English, one can also move *among the shelves* (example 39), then in Estonian we do not say **riiulite seas/hulgas kõndima*.

39. G29 320 *Heedless of their cries and struggles, perhaps even whistling a merry tune, Peter strolled **among the shelves** filling a capacious shopping trolley.* (BNC)

Other landmarks of this type are, for example, *ridade vahel* ‘between rows’, *pingiridade vahel* ‘between rows of benches’, *peenarde vahel* ‘between flowerbeds’, *kardinate vahel* ‘between the curtains’, *linde vahel* ‘between the sheets’, etc.

In addition to the spatial domain, the MEDIAL adpositions *between* and *vahel* are also used in the abstract domain together with plural landmarks (Figure 19). Here, similar meaning groups can be distinguished as presented above for the abstract uses of these adpositions with dual landmarks. Again, there is a basic division between the uses expressing the SPLITTING schema (examples 40a and 41a) and the uses expressing the LINK schema (examples 40b and 41b). Indeed, meaning groups are more or less the same as described above, the only difference being that of the number of landmarks.

40. a) A5R 503 *But in the mid-1970s there was an acrimonious conflict **between the different intelligence gathering agencies** in the province.* (BNC)
 b) G32 149 *Not just discrete little bundles of inert information but a system of stronger and weaker connections **between different knowledge areas.*** (BNC)
41. a) *Aasta-kahe tagused piirid erinevate arvutikasutajate*
 one-two-year old:NOM borderlines:NOM different:GEN computer-users:GEN
vahel hägustuvad üha. (MCE)
 between become-fuzzy-PRS:PL3 more-and-more
 ‘The one or two year-old borderlines **between different computer users** are becoming more and more fuzzy.’

- b) *Kunstnike vahel on juba 5 aastat pidevad*
 artists:GEN between be-PRS:SG3 already 5 years continuous:NOM
sidemed olnud. (MCE)
 relations:NOM be-PST:PCPL
 ‘There have been continuous relations **between** artists for already 5 years.’

A special comment may be made about the uses of *between* and *vahel* to express making choices. We can use either *between* or *among* in English and *vahel*, *seas*, *hulgast* in Estonian with plural landmarks with the verb *choose*. But again there is, in my opinion, a difference in construal and hence also in the meaning. My intuition is that we use *choose among* and *millegi seast/hulgast valima*, when the landmarks are uniform, i.e. similar and there is relatively many of them; *choose between* and *millegi vahel valima*, however, imply that the landmarks are somewhat more different and separate and there is a relatively small number of them. Furthermore, the Estonian contrast can maybe even be described with a difference in perspective – when we say that we have to choose between something *millegi vahel valima*, then we position or profile ourselves mentally as standing in the intermediate position of these landmarks or choices, and when we use *millegi seast/hulgast valima* (lit. ‘choose from among’), then we construe the whole set of entities as a container and we mentally have to pick out the choice and extract it from the container.⁶¹

Both English and Estonian MEDIAL adpositions take a plural landmark also in the temporal domain. In such cases, the landmarks are events of the type as expressed in examples 42 and 43:

42. C9Y 240 *It is important to eat enough to prevent you from feeling hungry **between** meals.*
 (BNC)
43. *TBSi kaameramehed kõndisid etteastete vahel tema*
 TBS:GEN camera-men:NOM walk-PST:PL3 performances:GEN between he:GEN
järel nagu politseinikud mõne meetri kaugusel. (MCE)
 behind like policemen:NOM couple meters distance:ALL
 ‘The cameramen of TBS walked behind him **between** the performances like policemen a couple of meters away.’

Similarly to the discussion of plural body parts, it can be proposed here that even such uses involve a conceptually dual landmark. When we are feeling hungry between meals (example 42), we actually feel hungry between two meals; and when something happens between the performances, it might very well be happening between many number

⁶¹ Tuomas Huomo has used the terms *global perspective* and *local perspective*; here, these might be useful in describing also the difference between *choose between sth/millegi vahel valima* and *choose among/millegi seast, hulgast valima*. The former is an instance of local perspective and the latter of global perspective.

of performances, but at each individual time it happens between the performance just finished and the one about to start (example 43). Moreover, both in English and Estonian such lexical units as *between the wars*, *sõdade vahel* were attested. Although coded formally as plural, these might also refer to dual landmarks – that of the two World Wars. Again, when we consider these instances as involving dual landmarks, then the total number of the instances of *between* and *vahel* used with a dual landmark is even bigger.

(b) ‘Trajector located in the intermediate position of a singular landmark’

Both Estonian and with some reservations English instantiate an elaboration of the central MEDIAL schema where the landmark is grammatically singular. This apparent idiosyncrasy is relatively frequent in Estonian, while only one instance was found for *between* in my corpus (examples 44):

44. B0H 456 *Macmillan may have appeared to treat the premiership as if he were a Whig grandee running a great estate in the gaps **between** his private reading.* (BNC)

It may very well be that this is simply a spelling error and that the possibility of *between* occurring together with a singular landmark is close to zero in English. Estonian *vahel*, *vahele*, *vahelt*, however, can occur with singular landmarks in the spatial domain. Such landmarks are of the following type: *mets* ‘forest’, *linn* ‘town’, *küla* ‘village’, *põõsas* ‘bush’, *võsa* ‘brush’, *vöö* ‘belt’, *krae* ‘collar’, *uks* ‘door’, *aed* ‘fence’, *hammas* ‘tooth’, *nokk* ‘peak’, etc. (examples 45a and 45b):

45. a) *Toivo S. koer hakkas äkitselt teest paarikümne meetri kaugusel soise võsa vahel haledalt niutsuma.* (CWE)
 Toivo S. dog:NOM begin-PST:SG3 suddenly road:ELA couple-of-dozen meters:GEN distance:ADE swampy:GEN brush:GEN between sadly whimper-SUP
 ‘Toivo S.’s dog began suddenly to whimper **in the swampy brush** (lit. ‘between the swampy brush’) a couple of dozen meters off the road.
- b) *... et nüüd võiks jah natuke linna vahel jalutada.* (CWE)
 that now could yes a-bit town:GEN between stroll-SUP
 ‘... that yes, now we could stroll **in the town** (lit. ‘between the town’) for a bit.’

Although in Estonian we can use a singular landmark with *vahel*, the landmark has to consist of separate parts. For example, *võsa* ‘brush’ consists of such separate parts leaves and branches, and *linn* ‘town’ consists of houses, streets, etc. I propose that when we use such singular landmarks with *vahel* as in examples 45a and 45b we actually conceptualise these landmarks as consisting of separate parts. The corresponding paraphrases would be that the dog was whimpering *in* the swampy brush (*võsas*) and that we will go for a walk *in*

the town (*linnas*) (cf. the central hypothesis that MEDIAL REGION is an elaboration of CONTAINEMTN). Still, I do believe that here the speaker once more construes the situation differently, i.e. there are slight meaning differences between *võsas* ('in the brush') and *võsa vahel* (lit. 'between the brush'). In Estonian, there is an interesting pair of expressions: *hamba vahel* (lit. between a tooth) and *hammaste vahel* ('between the teeth'). English does not make this distinction and when we wish to say to another person that she or he has a parcel of food stuck between the two front teeth, we would say *You have something between your teeth* and not *between your tooth*⁶²; the Estonians, however, would probably say that *Sul on midagi hamba vahel*. The expression *midagi on hammaste vahel* would be used when we mean two rows of teeth, as in example 46 (the use of *between* and *vahel* with plural body parts was discussed under the previous elaboration):

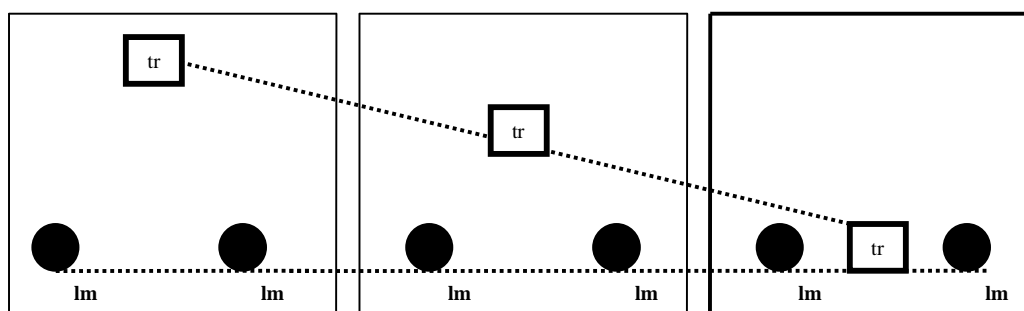
46. ... *ja vanamees vaatas talle veel tükk aega järele,*
 and old-man:NOM look-PST:SG3 him:ALL still bit time:GEN after
tikutops käes ja kustunud koni hammaste vahel... (MCE)
 match-box:NOM hand:INE and extinguished:NOM stub:NOM teeth:GEN between
 '...and the old man looked after him for a long time, with the match-box in his hands and the extinguished stub **between the teeth**.'

(c) 'Trajector moving to the intermediate position of a dual landmark'

This elaboration is connected to the PATH schema (Figure 13) and involves the motion of the trajector to the intermediate position of a dual landmark. The focus here is on the GOAL. English MEDIAL adposition *between* and Estonian *vahelle* can express the complex non-processual relationship depicted in Figure 20; the end state is the same as that of the central MEDIAL schema (Figure 18 above). This elaboration holds for plural landmarks as well; in Estonian for both singular and plural landmarks.

⁶² Google gave 17 100 results for *stuck between your teeth* and 6 results for *stuck between your tooth*, but all of the latter were phrases *stuck between your tooth and gum*, hence actually employing dual landmark.

Figure 20. ‘Trajector moving to the intermediate position of a dual landmark’



Example sentences 47 and 48 instantiate this elaboration:

47. H7F 1573 "Fine," Starke said, writing, "Grout" as in that stuff you put **between** tiles and bricks and things, right?" (BNC)
48. Keegi paksuke puges meie vahele. (BNC)
 some:NOM fatty:NOM squeeze-PST:SG3 us:GEN between:ALL
 ‘Some fatty squeezed **between** us.’

This elaboration holds also for the abstract domains in both languages (49 and 50a). In Estonian, *vahele* is used also in the temporal domain (50b), but no English equivalent was attested in my corpus:

49. CML 176 `Whatever is said in this room must stay **between** us. (BNC)
50. a) Jäagu see jutt meie kahe vahele. (EKSS)
 stay-JUSS this:NOM story:NOM us:GEN two:GEN between:ALL
 ‘Let this story stay **between** us two.’
- b) Nende sündmuste vahele jääb mitu aastakümnet. (EKSS)
 these:GEN events:GEN between:ALL remain-PRS:SG3 many decades:PRT
 ‘**Between** these events, there remains many decades.’

Example sentences 49 and 50a instantiate a schema where the trajector, i.e. the things said or *jutt* ‘story’, has to stay between the two landmarks, i.e. the people involved in the conversation (cf. the English idiom *between you, me, and the bedpost*). These uses again nicely illustrate the overall CONTAINMENT schema because the two people and the conversation they had constitute a sort of container, and the things said between them have to be kept strictly inside this container. Furthermore, in the use of the English phrase *come between* (example 51) and in the Estonian lative form *vahele*, the image schemas of SPLITTING (Figure 12) and BLOCKAGE (Figure 16) is especially prominent (example 52):

51. BNP 1082 *Not even a woman, it seems, can come between Lovejoy and his antiques.* (BNC)

52. *Ametivõimud olid sunnitud korraldajatele jõuga*
 authorities-NOM be-PST:PL3 force-PST:PCPL disorderlies:GEN force:COM
vahele astuma. (EKSS)
 between:ALL step-SUP
 ‘The authorities were forced to use force and **come between** the disorderlies.’ (lit. ‘step between’)

In addition to the phrasal verb *come between*, the image schema of BLOCKAGE is also instantiated by the English idiom *drive a wedge between somebody*; other Estonian idiomatic phrases instantiating the BLOCKAGE schema are *vahele segama* (‘intervene’), *kätt vahele panema* (lit. ‘put a hand between’/ ‘stop sb from doing sth’) and *kaikaid kodarate vahele loopima*⁶³ (lit. ‘throw clubs between the spokes’/ ‘put a spoke in sb’s wheel’).

A number of other English idioms also express lative direction and can be described with the more general schema of CONTAINMENT⁶⁴: e.g. *fall/be caught between two stools* and *take a bit between your teeth*. In Estonian, there are many phrasal verbs with the lative form *vahele* and other idiomatic expressions which have a strong sense of CONTAINMENT: e.g. *vahele jääma* (lit. ‘remain between’/ ‘get caught’), *vahele kukkuma* (lit. ‘fall between’/ ‘get caught’), *vahele võtma* (lit. ‘take between’/ ‘catch sb’), *pihtide vahele võtma* (lit. ‘take between the tongs’), *kellegi hammaste vahele sattuma* (lit. ‘get between sb’s teeth’), *kahe kõva kivi vahele sattuma* (lit. ‘get between two hard rocks’), *kahe tule vahele jääma* (‘remain between two fires’), *rataste vahele jääma* (lit. ‘remain between the wheels’). If, for example, the police catch you (*võtab vahele*) or you get caught by a teacher (*vahele jääma*), then you are in a pretty strict container, i.e. a difficult situation.⁶⁵

(d) ‘Trajector moving away from the intermediate position of a dual landmark’

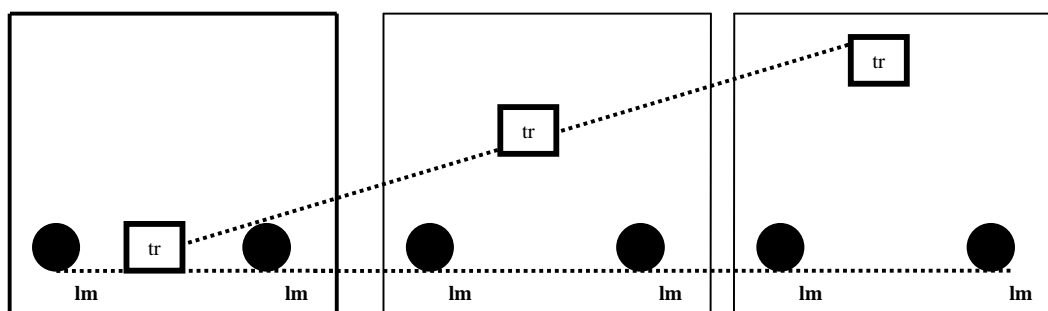
Similarly to the previous elaboration, this one is also connected to the PATH schema and involves the trajector moving away from the intermediate position of a dual landmark; here the focus is on the SOURCE. English MEDIAL preposition *between* in combination with the source preposition *from* and the Estonian separative form *vahelt* express the complex non-processual relationship depicted in Figure 21, where the beginning state or the SOURCE is the same as that of the central MEDIAL schema (Figure 18).

⁶³ There is a synonymous expression with the inessive case: *kellelegi kaikaid kodaratesse loopima*.

⁶⁴ A well-known metaphorical transfer described in cognitive linguistics literature is that of conceptualising states and conditions as locations (Johnson 1987, Lakoff 1987, Lakoff and Johnson 1980).

⁶⁵ After being put to jail by the police when you get caught, you are no longer in an ‘abstract’ container; instead you are in a very real container with bars.

Figure 21. ‘Trajector moving away from the intermediate position of a dual landmark’



Similarly to the previous elaboration, both *from between* and *vahelt* can also occur with a dual and plural landmark.

53. B3F 823 ...a cheeky little field mouse popped up **from between** her sheets where it had evidently been nesting... (BNC)
54. *Poiss ilmus põõsaste vahelt nähtavale.* (EKSS)
 boy:NOM appear-PST:SG3 bushes:GEN between:ABE into-view
 ‘The boy came into view **from between** the bushes.’

In Estonian, *vahelt* can also instantiate the elaboration where the SOURCE is a singular landmark (examples 55a and 55b):

55. a) *Piilus kardina vahelt välja.* (EKSS)
 peep-PST:SG3 curtain:GEN between:ABE out
 ‘He/She peeped out from between the curtains.’
- b) *Keegi pistis pea ukse vahelt sisse.* (EKSS)
 somebody:NOM stick-PST:SG3 head:PRT door:GEN between:ABE into
 ‘Somebody stuck their head in from the door.’

As was discussed above under elaboration (b), these singular landmarks can be conceptualised as consisting of separate parts. Our basic experience with curtains is that they consist of two separate curtains; one can be drawn to one side and the other to other side and when they are close together, there might still be a tiny gap, from which one can peep out. Our experience with doors also suggests that it consists of different parts – a frame and a movable/moving part with a handle. In example (b), the door is slightly open and there is a gap between the frame and the movable part, from where the person has stuck their head in.

The present elaboration is closely connected to the REMOVAL OF BLOCKAGE schema (Figure 16). If we take something from between two or more landmarks, it no longer separates or blocks the two landmarks (example 56):

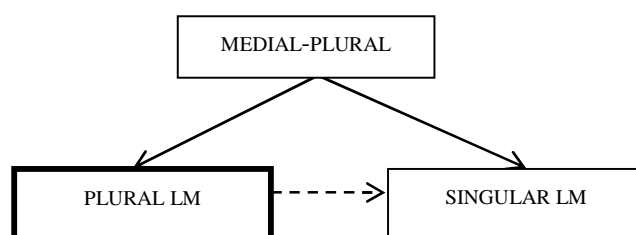
56. *Ühised raskused sulatasid jää inimeste vahelt.* (EKSS)
 common:NOM difficulties:NOM melt-PST:PL3 ice:PRT people:GEN between:ABE
 ‘Common difficulties melted the ice **between** people.’

Such idiomatic phrases like in English *read between the lines* and in Estonian *ridade vahelt lugema*, *kellegi küünite vahelt pääsema* (lit. ‘escape from sb’s fingernails’), *vahelt lõikama* (lit. ‘cut from between’), *vahelt tegema* (lit. ‘make/do from between’), and *vahelt näppama* (lit. ‘snatch from between’) can also be considered as instances of the schema depicted in Figure 18.

2.5 The MEDIAL-PLURAL Group: *among*, *amongst*, *hulgas*, *hulka*, *hulgast*, *seas*, *sekka*, *seast*

This section provides a semantic description of the MEDIAL-PLURAL adpositions in English and Estonian, i.e. such adpositions which are used for expressing spatial locations where the trajector is located in an intermediate position in relation to more than two landmarks. The English dataset includes the prepositions *among* and *amongst*⁶⁶; the Estonian dataset includes the three-member postpositions *seas*, *sekka*, *seast* and *hulgas*, *hulka*, *hulgast*. Both the English and Estonian MEDIAL-PLURAL adpositions form a complex category depicted in Figure 22.

Figure 22. Network of MEDIAL-PLURAL adpositions



This network highlights the fact that this subset of MEDIAL REGION adpositions can be abstractly characterized with one and the same central schema: **MEDIAL-PLURAL**. From the networks it can also be seen that the central schema of the MEDIAL-PLURAL category adpositions is proposed to have two elaborations, one being the **prototype**. The elaboration considered the prototype in this network is the case when the landmark is plural (drawn with a heavy box); the other elaboration involves a singular landmark. The claim that these

⁶⁶ Although English dictionaries commonly say that *amongst* is simply a variant of *among*, in the present analyses they are studied separately.

instances of MEDIAL-PLURAL adpositions where the landmark is plural are the prototypical ones is supported by the corpus analysis. Tables 14 and 15 present the results of the corpus analysis carried out with the MEDIAL-PLURAL adpositions⁶⁷. Table 14 indicates the precise number of instances of these adpositions with either a singular or plural landmark together for all of the different domains, i.e. spatial and abstract; Table 15 expresses the same data as proportions. The label *not applicable* refers to such instances where the determination of the quantity of the landmark was not possible. For the English adpositions *among* and *amongst* such instances were the fixed phrases *among others*, *amongst others*, *among other things*. For the Estonian dataset, these instances involved using *seas*, *sekka*, *hulgas* as adverbs; phrasal verbs like *sõna sekka ütlema*, *sekka lööma*; and fixed phrases like *muu seas* and the very frequent *muu hulgas*.

Table 14. MEDIAL-PLURAL adpositions: quantity of landmarks

	singular	plural	not applicable	TOTAL
among	19	372	21	412
amongst	5	88	6	99
seas	17	185	2	204
sekka	12	37	7	56
seast	10	50	0	60
hulgas	15	179	29	223
hulka	16	40	0	56
hulgast	12	48	0	60

Table 15. MEDIAL-PLURAL adpositions: quantity of landmarks (proportions)

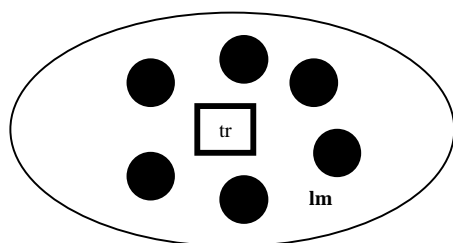
	singular	plural	not applicable	TOTAL
among	4.6%	90.3%	5.1%	100%
amongst	5.1%	88.9%	6.1%	100%
hulgas	6.7%	80.3%	13.0%	100%
hulka	28.6%	71.4%	0.0%	100%
hulgast	20.0%	80.0%	0.0%	100%
seas	8.3%	90.7%	1.0%	100%
sekka	21.4%	66.1%	12.5%	100%
seast	16.7%	83.3%	0.0%	100%

⁶⁷ See Appendix 1 for the general description of the corpus data.

As can be seen from these tables and indeed, as can be plausibly hypothesised, the majority of the MEDIAL-PLURAL adpositions are considerably more often used with a plural landmark than with a singular one. The percentages for *among*, *amongst* and *seas* are around 90, for *hulgas*, *hulgast*, *seast* this figure is around 80. The postulation of the prototype found support from the experimental findings to be described in chapter 3.

Figure 23 presents the central schema that applies for all of the English and Estonian MEDIAL-REGION adpositions. This schema can be interpreted as ‘Trajector located in the intermediate position of a plural landmark’.

Figure 23. MEDIAL-PLURAL: ‘Trajector located in the intermediate position of a plural landmark’



This figure involves the basic CONTAINMENT schema, in accordance with the central hypothesis that MEDIAL REGION is an elaboration of CONTAINMENT, plus the additional notion that the trajector has to be surrounded by all of the landmarks. As is shown in the experimental findings to be described in chapter 3, the centrality of the trajector is not important, i.e. the trajector does not have to be at the very centre of landmarks. However, a condition that does seem to apply is that the landmarks should be taken as a whole group (cf. MEDIAL schema in Figure 19, where the landmarks are taken individually). In Figure 23, the idea of landmarks constituting a group is represented by using the schematic notation of an ellipsis. The ellipsis conveys the idea that these multiple landmarks are taken together as a group in our perceptual field, they constitute a unitary bounded entity. Because of the condition that the trajector has to be surrounded by the landmarks, I propose that out of the three elaborations of MEDIAL REGION, MEDIAL-PLURAL has the strongest link with the overall containment schema. In this elaboration, the sense of inclusion is felt to be the strongest.

What follows is a more detailed illustration of the uses of English and Estonian MEDIAL-PLURAL adpositions both as they instantiate the central schema and the various elaborations.

(i) The central schema MIDDLE: ‘Trajector located in the intermediate position of a plural landmark’

The corpus analysis confirmed the intuition that all of the selected MEDIAL-PLURAL adpositions in both English and Estonian are predominantly used with multiple landmarks. Interestingly, if we only look at the figures for the quantity of the landmark in the spatial domain (Table 17 below), then contrary to what might be assumed, there is a higher number of singular landmarks. This apparent “anomaly”, however, will be explained under elaboration (a). The uses in the example sentences 57a-b and 58a-b instantiate the central schema presented in Figure 23.

57. a) BP7 96 *There, **among** the junk mail and bills delivered while she had been riding out first lot, was an envelope written in a careful, neat hand.* (BNC)
 b) H90 792 *On this, **amongst** the few trees growing there, stood a low dark building which, in the fading light, had a desolate, sinister air.* (BNC)
58. a) *Tähendab, Haldurile antud paberite hulgas ei so Haldur:ALL give-PST:PASS:PCPL papers:GEN among not olnud dokumenti, mis ...* (MCE)
 be-PST:PCPL document:PRT that
 ‘So, **among** the papers given to Haldur, there was no document that...’
 b) *Marilyn otsis ema asjade seas mõnd Marilyn:NOM search-PST:SG3 mother:GEN things:GEN among some:PRT märkmikku, kust mingitki infi võiks saada.* (MCE)
 notebook:PRT from-where some:PRT:PART info:PRT could get-SUP
 ‘Marilyn was looking for a notebook **among** her mother’s things, from where to get at least some information.’

In addition to the spatial domain, this central schema also accounts for the more abstract uses of these adpositions in both languages (English examples in 59a-b and Estonian examples in 60a-b):

59. a) *Snakes are **among** the animals most feared by humans.* (OED)
 b) CKA 428 *Ireland’s playing pool is small because, **amongst** the team sports, rugby ranks a distant fourth behind gaelic football, hurling and soccer.* (BNC)
60. a) *Teadlaste hulgas teda ei hinnata.* (EKSS)
 scientists:GEN among he:PRT not appreciate-SUP
 ‘He is not appreciated **among** the scientists.’

b) *Alkoholi kuritarvitus on kasvanud eriti noorte seas.* (EKSS)
 alcohol:PRT abuse:NOM be-PRS:SG3 grow-PST:PCPL especially young:GEN among
 ‘Alcohol abuse has grown especially **among the youth.**’

None of the English and Estonian MEDIAL-PLURAL adpositions can be used in the temporal domain.

Very commonly, with such uses of the MEDIAL-PLURAL adpositions, the landmarks were animate as shown in Table 17. This table presents the results of the corpus analysis, where the instances of these adpositions were coded according to whether the landmark was animate or non-animate; *not applicable* refers to instances where it was not possible to determine the animacy of the landmark. Table 18 gives the same data in proportions. Tables 17 and 18 represent the results for both spatial and abstract domains.

Table 17. MEDIAL-PLURAL adpositions: animacy of landmarks

	animate	non-animate	non-applicable	TOTAL
among	290	101	21	412
amongst	61	32	6	99
seas	169	30	5	204
sekka	35	14	7	56
seast	52	8	0	60
hulgas	149	45	29	223
hulka	28	28	0	56
hulgast	44	16	0	60

Table 18. MEDIAL-PLURAL adpositions: animacy of landmarks (proportions)

	animate	non-animate	non-applicable	TOTAL
among	70.4%	24.5%	5.1%	100%
amongst	61.6%	32.3%	6.1%	100%
seas	82.8%	14.7%	2.5%	100%
sekka	62.5%	25.0%	12.5%	100%
seast	86.7%	13.3%	0%	100%
hulgas	66.8%	20.2%	13.0%	100%
hulka	50.0%	50.0%	0%	100%
hulgast	73.3%	26.7%	0%	100%

(ii) Elaborations

The central schema of MEDIAL-PLURAL category has, in addition, a number of elaborations. The most important one, which holds for both English and Estonian is that of ‘Trajector located in the intermediate position of a singular landmark’. The other two elaborations pertain mostly to Estonian, where the MEDIAL category also includes the lative and separative members of the *hulgas-hulka-hulgast* and *seas-sekka-seast* three-member sets. As already mentioned, in the present thesis, I do not wish to commit to any claims about how these three members are related to each other. Still, I do believe that they belong together and are very closely related also semantically.

(a) ‘Trajector located in the intermediate position of a uniplex landmark’

This elaboration accounts for the fact that all of the MEDIAL adpositions in English and Estonian can have, instead of a plural landmark a singular one. However, it should be stressed that these figures are by no means high. Table 19 presents the number of instances of these adpositions used in the spatial domain with either a singular or a plural landmark as attested in my corpus analysis.

Table 19. MEDIAL-PLURAL adpositions: quantity of landmarks in the spatial domain

	singular	plural	not applicable	TOTAL
among	7	47	0	54
amongst	1	18	0	19
seas	8	36	1	45
sekka	7	17	0	24
seast	7	20	0	27
hulgas	4	21	0	25
hulka	4	3	0	7
hulgast	7	14	0	21
TOTAL	45	176	1	222

The label **singular** in my corpus analysis refers to the grammatical singularity, i.e. whether the landmark is in the singular or plural. However, if studied in detail, all of these grammatically singular landmarks share a similar characteristic – they can all be conceptualised as collections of things, i.e. they are collective nouns. Thus, here the use of these adpositions actually instantiates the same schema as for plural adpositions (Figure

23). Table 19 presents the exact number of instances of the singular landmarks attested in the spatial domain of English and Estonian MEDIAL-PLURAL adpositions; these singular landmarks were divided into either animate or non-animate. An interesting characteristic in Table 20 is that animate singular landmarks are attested only for the Estonian dataset and not for English. The animate group includes such collective nouns as *rahvas*, *rahvamass* ('people, crowd'), *kogudus* ('congregation'), *meeskond* ('team'), *delegatsioon* ('delegation'), *publik* ('audience'); the inanimate group includes such nouns as *furniture*, *fern*, *feather*, *detritus*, *nature*, *scree*, *segadus* ('mess'), *koli* ('junk'), *vara* ('property'), *inventaar* ('inventory'). This use of collective nouns with MEDIAL-PLURAL adpositions provides further support for claiming that these adpositions require the plural landmark to form a unitary bounded entity and although they do consist of separate parts, the emphasis here is on their unitary nature.

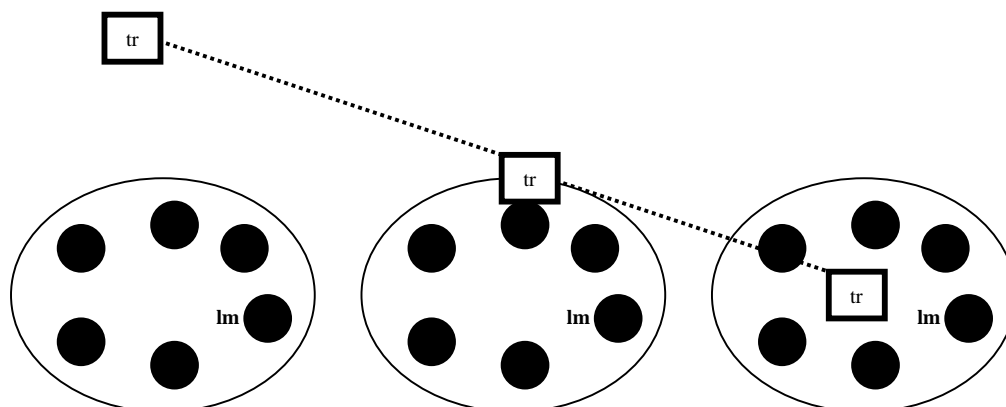
Table 20. MEDIAL-PLURAL adpositions: animate and non-animate singular landmarks in the spatial domain

	animate	non-animate	TOTAL
among	0	7	7
amongst	0	0	0
seas	7	1	8
sekka	7	0	7
seast	6	1	7
hulgas	2	2	4
hulka	3	1	4
hulgast	5	2	7

(b) 'Trajector moving to the intermediate position of a plural landmark'

This elaboration is connected to the PATH schema (Figure 13) and involves the motion of the trajector to the intermediate position of the landmarks. The focus here is on the GOAL. English MEDIAL-PLURAL adpositions *among* and *amongst* and Estonian *sekka* and *hulka* can express the complex non-processual relationship depicted in Figure 24; the end state is the same as that of the central schema MEDIAL-PLURAL (Figure 23). This elaboration holds both for singular and plural landmarks.

Figure 24. ‘Trajector moving to the intermediate position of a landmark’



Example sentences 61a-b and 62a-b instantiate this elaboration:

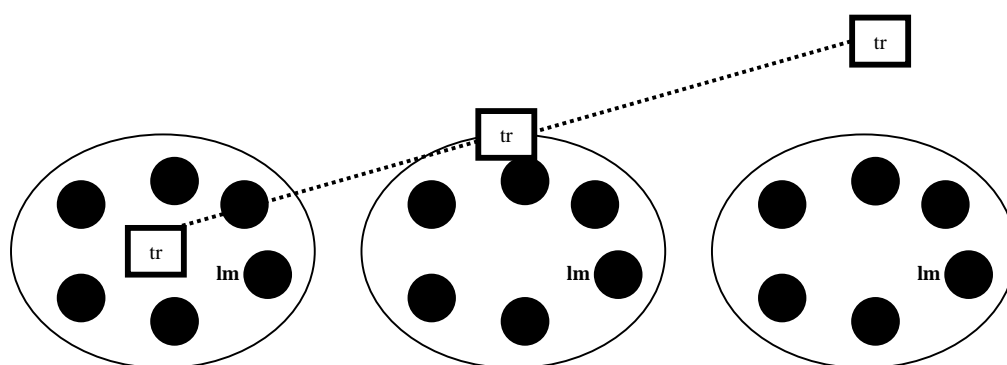
61. a) EWC 3357 "O Frith" thought Hazel, turning his head for a moment to the bright glow in the west," are you sending us to live **among the clouds**? (BNC)
 b) CRE 2437 He locked the door of his treasure room, sat down **amongst his collection**, and waited for inspiration. (BNC)
62. a) Kadus kiiresti rahva hulka. (EKSS)
 disappear-PST:SG3 quickly crowd:GEN among:ILL
 ‘He/She quickly disappeared **into the crowd**’.
- b) Taevas kihutavate pilvede sekka ilmus päike. (EKSS)
 sky:INE speed-PRS:PCPL clouds:GEN among:ILL appear-PST:SG3 sun:NOM
 ‘The sun appeared **among the clouds speeding in the sky**.’

This elaboration also pertains to the use of *sekka* and *hulka* in Estonian phrasal verbs and idiomatic expressions, like *sekka lööma* (lit. ‘hit among’/‘join in’), *sekka pistma* (lit. ‘stick among’/‘add’), *sõna sekka ültema* (lit. ‘say a word among’/‘add’). An interesting comparison can be drawn between *sekka pistma* and *vahele pistma* (lit. ‘stick between’/‘interrupt’). Here, again, the difference between these two phrasal verbs reflects the difference between the central schemas for these MEDIAL REGION adpositions. When you wish to add something during somebody else’s conversation and the phrasal verb *sekka pistma* is used, then the sense of interruption, in my opinion, is weaker. This is because the potential landmark, i.e. the things already said by the other person, and the trajector, i.e. the things added by you, form a more uniform entity and you contribute to the overall conversation by adding similar things. However, when the phrasal verb *vahele pistma* is used, then there is the stronger sense of interruption, as the image schema of SPLITTING is instantiated.

(c) ‘Trajector moving away from the intermediate position of a plural landmark’

Similarly to the previous elaboration, this one is also connected to the PATH schema and involves the trajector moving away from the intermediate position of landmarks; here the focus is on the SOURCE. From the MEDIAL-PLURAL adpositions, English adpositions in combination with the source preposition *from* and Estonian *hulgast*, *seast* express the complex non-processual relationship depicted in Figure 25, where the beginning state or the SOURCE is the same as that of the central schema MEDIAL-PLURAL (Figure 23).

Figure 25. ‘Trajector moving away from the intermediate position of a plural landmark’



Example sentences 63a-b and 64a-b instantiate this elaboration. Similarly to the previous elaboration, it can be applied to both singular and plural landmarks.

63. a) ACE 1626 *She lifted a bottle of Champagne **from among** the photographs.* (BNC)
 b) APR 19 *Its spine was missing, or rather protruded **from amongst** the leaves like a bulky marker.* (BNC)
64. a) *Võttis raamatute hulgast endale vajaliku.* (EKSS)
 take-PST:SG3 books:GEN among:ELA himself:ALL necessary-one:PRT
 ‘He took for himself the necessary one **from among** the books.’
- b) *Leidsin selle vana kannu koli seast.* (EKSS)
 find-PST:SG1 this:GEN old:GEN jug:GEN junk:GEN among:ELA
 ‘I found this old jug (**from**) **among** the junk.’

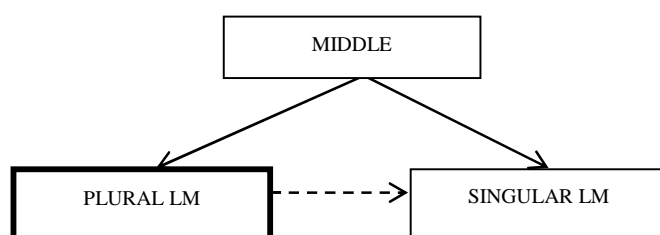
2.6 The MIDDLE Group: *amid*, *amidst*, *in the middle of*, *in the centre of*, *keskel*, *keskele*, *keskelt*, *keset*

This section provides a semantic description of the MIDDLE adpositions in English and Estonian, i.e. such adpositions that are used for spatial locations where the trajector is located in a middle position in relation to a (usually) single landmark. The English dataset

includes two simple prepositions *amid* and *amidst*⁶⁸ and two complex prepositions *in the middle of* and *in the centre of*⁶⁹; the Estonian dataset includes the three-member postposition *keskel-keskele-keskelt* and the preposition *keset*.

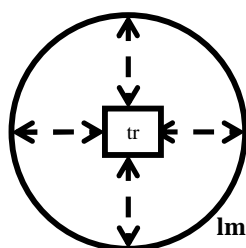
Both the English and Estonian MIDDLE adpositions form a complex category presented in Figure 26.

Figure 26. Network of MIDDLE Adpositions



This network highlights the fact that this subset of MEDIAL REGION adpositions can all be abstractly characterized with one and the same schema: **MIDDLE**. This schema can be interpreted as ‘Trajector located at the centre region of a landmark’ and is presented below in Figure 27. This figure involves the basic CONTAINMENT schema, in accordance with the central hypothesis that MEDIAL REGION is an elaboration of CONTAINMENT, plus the additional notion that the trajector has to be located at the very centre of the LM. The idea of central position is conveyed with arrows. All of the English and Estonian MIDDLE adpositions instantiate this schema.

Figure 27. MIDDLE: ‘Trajector located at the centre region of a landmark’



⁶⁸ The reason why *amid* and *amidst* were put into this group of adpositions rather than into the MEDIAL-PLURAL group, has to do with grammaticalization. The source of *amid* and *amidst* is presumably the object part denoting “middle”. Although the tradition in English dictionaries is to say that *amidst* is a literary version of *amid*, they are here analysed as two separate prepositions.

⁶⁹ See section XX for the discussion why *in the middle of*, *in the centre of* are in the present thesis taken to be complex prepositions rather than free combinations.

From the network it can be seen that the central schema of the English and Estonian MIDDLE category adpositions has two elaborations, one being the **prototype**. The elaboration considered the prototype in this network is the case when the ‘Trajector is located at the centre region of a singular landmark’; the other elaboration involves a plural landmark. The claim that these instances of MIDDLE adpositions where the landmark is singular are the prototypical ones is supported by the corpus analysis. Table 21 presents the number of instances for English and Estonian MIDDLE adpositions for the category of quantity⁷⁰. The label *not applicable* refers to the instances of these lexical items where the landmark has been omitted, e.g. used as adverbs.

Table 21. MIDDLE adpositions: quantity of landmarks (proportions)

	singular	plural	not applicable	TOTAL
amid	103	102	0	205
amidst	29	21	0	50
in the middle of	194	6	0	200
in the centre of	135	6	0	141
keskel	79	21	1	101
keskele	25	11	14	50
keskelt	24	21	16	61
keset	182	19	0	201

Table 22. MIDDLE adpositions: quantity of landmarks (proportions)

	singular	plural	not applicable	TOTAL
amid	50.2%	49.8%	0%	100%
amidst	58.0%	42.0%	0%	100%
in the middle of	97.0%	3.0%	0%	100%
in the centre of	95.7%	4.3%	0%	100%
keskel	78.2%	20.8%	1.0%	100%
keskele	50.0%	22.0%	28.0%	100%
keskelt	39.3%	34.4%	26.2%	100%
keset	90.5%	9.5%	0%	100%

These results presented in Tables 21 and 22 indicate the centrality or prototypicality of these uses where the landmark is singular.

⁷⁰ See Appendix 1 for the general description of the corpus data.

The other elaboration where the landmark is plural can also be claimed to reflect the idea of containment. Similarly to the central schema of MEDIAL-PLURAL adpositions, these multiple landmarks have to be conceptualised as some sort of unitary bounded entity – they are taken to be spatially contiguous within our perceptual field, otherwise the use of these adpositions would not be felicitous. I would even go as far as claiming that the multiple landmarks form a container in which the trajector is located. The difference between the schemas instantiated by MEDIAL-PLURAL adpositions and MIDDLE adpositions when used with a multiple landmark is discussed below under elaboration (a).

(i) The central schema MIDDLE: ‘Trajector located at the centre region of a landmark’

As can be seen from Tables 21 and 22, the English MIDDLE adpositions that most frequently instantiate the central schema of MIDDLE category are *in the middle of* and *in the centre of* – in about 90% of the time the landmark of these adpositions is singular. Although not as frequently, *amid* and *amidst* are also used with singular landmarks. The most typical member of the Estonian MIDDLE adpositions appears to be *keset*, which has the highest frequency for singular landmarks. However, *keskel* is also very frequently used with a singular landmark; the case of *keskele* and *keskelt* is not as clear-cut, because they are also often used as adverbs and thus lack an overt landmark. The uses of MIDDLE adpositions in the following sentences (examples 65a-d for English, and 66a-b for Estonian) instantiate the central schema presented in Figure 27.

65. a) *Our dream home, set amid magnificent rolling scenery.* (OED)
 b) FSR 2209 *Twisting the knob to magnify the image of four ghostly white shapes amidst a field of darkly glowing emerald,...* (BNC)
 c) EVS 1214 *I got up on a bench in the middle of the market and we were soon surrounded.* (BNC)
 d) G1M 1617 *Piper spotted Alex Bannen and his son sitting in the centre of the refectory.* (BNC)
66. a) *Maja asub metsa keskel.* (EKSS)
 house:NOM be-located-PRS:SG3 forest in the middle of
 ‘The house is located **in the middle of the forest.**’
- b) *Maja asub keset metsa.* (EKSS)
 house:NOM be-located-PRS:SG3 in the middle of forest
 ‘The house is located **in the middle of the forest.**’

In addition to the spatial domain, this central schema also accounts for the more abstract uses of the MIDDLE adpositions in both languages (English examples 67a-d and Estonian examples 68a-b):

67. a) CEN 1054 *Critics claimed he was hoping it would be ignored **amid** the furore of the US presidential elections.* (BNC)
 b) AS7 967 ***Amidst** the usual panic that surrounds such occasions, I tried to keep calm.* (BNC)
 c) HGY 154 `; *Sure and wouldn't you arrive right **in the middle of** this débâcle?* (BNC)
 d) KPV 1450 *Yes, yes, so would I, you know, right **in the centre of** the action, I thought we had brilliant seats.* (BNC)
68. a) ... *tuule ja saabuva pimeduse keskel*
 wind:GEN and coming:GEN darkness:GEN in-the-middle-of
seisavad inimeste eluasemed. (MCE)
 stand-PRS:PL3 people:GEN dwellings:GEN
 ‘... people’s dwellings are standing amid the wind and the coming darkness.’
 b) *Ta oli alati keset liikumist ja arengut.* (EKSS)
 he:NOM be-PST:SG3 always in the middle of movement:PRT and progress:PRT
 ‘He was always **in the middle of** movement and progress.’

The central schema also holds in the temporal domain, where the landmark is usually singular. From the English sub-set of MIDDLE adpositions, only *in the middle of* can be used to express temporal relations (example 69); all of the Estonian MIDDLE adpositions can instantiate temporal relations (examples 70a-b):

69. CN3 211 *I was woken **in the middle of** the night by a phone call.* (BNC)
70. a) *See juhtus aprilli keskel.*
 it happen-PST:SG3 April:GEN in the middle of
 ‘It happened **in the middle of** April.’
 b) *Meid äratati keset ööd.*
 we:PRT awake-PST:IMP in the middle of night:PRT
 ‘We were woken **in the middle of** the night.’

It is proposed for the temporal domain, especially in connection with the prepositions *in the middle of* and *keset*, that they, in addition to the central schema, involve also the image schema of SPLITTING (Figure 12). However, such a proposition is based on my own intuition and I cannot provide any insights into other language users’ minds. But still, when we look at sentences like 69 and 70a, then *in the middle of* and *keset* are predominantly used with such temporal landmarks the continuity of which is abruptly interrupted. For instance, recurrent landmarks both for English and Estonian are *night*, *day*,

week, etc. and landmarks that denote some kind of activity the process of which was again interrupted.

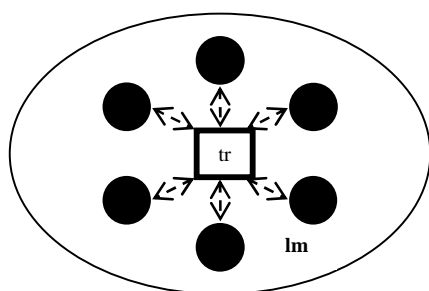
(ii) Elaborations

The central schema of MIDDLE category has, in addition, a number of elaborations. The most important one, which holds for both English and Estonian is that of ‘Trajector located at the centre region of a plural landmark’. The other two elaborations pertain mostly to Estonian, where the MIDDLE category also includes the lative and separative member of the *keskel-keskele-keskelt* three-member set

(a) ‘Trajector located at the centre region of a multiplex landmark’

This elaboration accounts for the fact that all of the MIDDLE adpositions in English and Estonian can have, instead of a singular landmark a plural one. However, the different adpositions differ in their frequency with which they instantiate this elaboration. In English, *amid* and *amidst* are much more frequently used with a plural landmark than *in the middle of* and *in the centre of* (Tables 21 and 22). In Estonian, *keset* shows a clear tendency to take a singular landmark; with *keskel*, *keskele*, *keskelt* the situation is not as clear-cut. The elaboration ‘Trajector located at the centre region of a plural landmark’ is schematically presented in Figure 29.

Figure 29. ‘Trajector located at the centre region of a multiplex landmark’



In this case, the relative centrality of the trajector with respect to the landmarks is still important (conveyed with the help of arrows). This was supported in the experimental findings, where it is shown that when there are more than two landmarks, then the choice of *in the middle of* and *keskel* is affected by the relative centrality of the trajector. The issue

of centrality is the key factor which makes this figure different from the central schema of MEDIAL-PLURAL adpositions presented above (Figure 23).

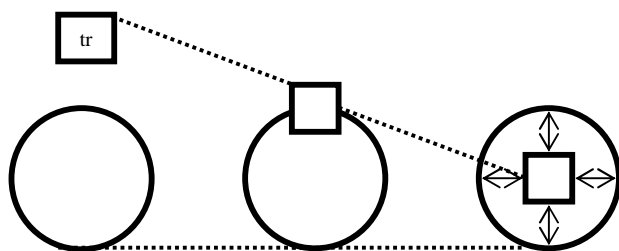
The ellipsis in Figure 29 conveys the idea that these plural landmarks are taken together in our perceptual field as a unitary bounded entity. This elaboration also has a closer link with the INTERIOR REGION as it has a somewhat stronger sense of surrounding and inclusion. In the following example sentences, a young woman is surrounded by the leaves and fruits (71a), the hotel Paloma Blanca by orange trees and gardens (71b), the old man by other people (71c), a square by the buildings (71d), the house by the trees (72a), and the boy by the flowers (72b):

71. a) C89 242 *A series of painting, in late 1989-90, depict a young woman dressed in orange and white, **amid** glowing fallen leaves and paradisaical fruits.* (BNC)
 b) AM0 986 *The ideal location of the Paloma Blanca, set **amidst** orange trees and attractive gardens means you can enjoy the best of both worlds.* (BNC)
 c) ATE 19 *The old man asleep **in the middle of** them all was Emmet Ryan.* (BNC)
 d) GOL 3400 ***In the centre of** the buildings was a square parade ground with a forlorn flagpole.* (BNC)
72. a) *Maja asub puude keskel.* (EKSS)
 house:NOM be-located-PRS:SG3 trees:GEN in the middle of
 ‘The house is located **in the middle of** the trees.’
- b) *Poiss lamas aasal keset lilli.* (EKSS)
 boy:NOM lie:SG3 meadow:ADE in the middle of flowers:PRT
 ‘The boy lay in the meadow **in the middle of** the flowers.’

(b) ‘Trajector moving to the centre region of a landmark’

This elaboration is connected to the PATH schema (Figure 13) and involves the motion of the trajector with respect to the centre region of a landmark. The focus here is on the GOAL. Estonian MIDDLE adpositions *keskele* and *keset* and English prepositions *amid*, *amidst*, *in/to the middle of*, *in/to the centre of* can all express the complex non-processual relationship depicted in Figure 30, where the multiple configurations that comprise this continuous series of states is shown; the end state is the same as that of the central schema MIDDLE (Figure 27).

Figure 30. ‘Trajector moving to the centre region of a landmark’



Example sentences 73a-d and 74a-b instantiate this elaboration:

73. a) *Blair insists EU rebate must be put **amid** broader debate of EU finances.* (WWW)
 b) *The effect is as if a sane man were suddenly put **amidst** a crowd of lunatics.* (WWW)
 c) AJA 1069 *There's a great temptation to move **to the middle of** Exmoor where the quality of life is fantastic.* (BNC)
 d) A16 565 *Screw the small leg **to the centre of** the base.* (BNC)
74. a) *Ujusime jõe keskele.* (EKSS)
 swim-PST:PL1 river:GEN to the middle of
 ‘We swam **to the middle of** the river.’
- b) *Asetas laua keset tuba.* (EKSS)
 place-PST:SG3 table:GEN in the middle of room:PRT
 ‘He/She placed the table **in/to the middle of** the room.’

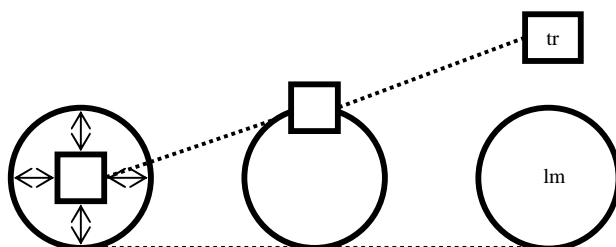
This elaboration holds both for singular and plural landmarks. Furthermore, the same schema can be extended also to the temporal domain, as in examples 75 and 76.

75. HHX 10971 *..., whereas the oldest regular units go back only **to the middle of** the 17th century.* (BNC)
76. *Nõupidamine lükati edasi kuu keskele.* (EKSS)
 meeting:NOM push-PST:IMP forward month:GEN to the middle of
 ‘The meeting was postponed **to the middle of** the month.’

(c) ‘Trajector moving away from the centre region of a landmark’

Similarly to the previous elaboration, this one is also connected to the PATH schema and involves the trajector moving away from the centre region of the landmark; here the focus is on the SOURCE. From the subset of MIDDLE adpositions, English adpositions in combination with the source preposition *from* and Estonian *keskelt* express the complex non-processual relationship depicted in Figure 31, where the beginning state or the SOURCE is the same as that of the central schema MIDDLE (Figure 27).

Figure 28. ‘Trajector moving away from the centre region of a landmark’



Example sentences 77a-d and 78a-b instantiate this elaboration. Similarly to the previous elaboration, it can be applied to both singular and plural landmarks.

77. a) FU8 2210 *His astonished gaze was fixed on the second familiar face staring out at the public floggings **from amid** the crowd of frightened coolies.* (BNC)
 b) FNT 1277 *And when the chateau the Princesse had now occupied for over twenty years emerged **from amidst** snow-clad trees halfway up an escarpment,...* (BNC)
 c) A6C 562 *Then, in that second of hushed silence before the screen and fanfare blaze out, there came **from the middle of** the auditorium a huge and shocked voice...* (BNC)
 d) APM 449 *Then he moved **from the centre of** the room towards Franca.* (BNC)
78. a) Rivi *keskelt* astus välja kaks vabatahtlikku. (EKSS)
 row:GEN from the middle of step-PST out two volunteers
 ‘Two volunteers stepped out **from the middle of** the row.’
 b) Väikeste kuuskede *keskelt* ilmus nähtavale põder.
 small:PL:GEN spruce:PL:GEN from the middle of come-PST:SG3 into-view elk:NOM
 ‘An elk appeared **from the middle of** the small spruce.’

This elaboration can also be extended to the temporal domain (examples 79 and 80):

79. B1P 713 ***From the middle of** the sixteenth century there had, however, been some confusion in England.* (BNC)
80. Sajab juba juuni *keskelt* peale. (EKSS)
 rain-PRS:SG3 already June:GEN from the middle of on(to)
 ‘It rains since/**from the middle of** June.’

An interesting use of *keskelt* can be seen in the example sentence 81, where it instantiates a static rather than a dynamic situation. It has been suggested that this use of the adposition *keskelt* is related to the more general use of separative cases to express a

part-whole relationship, as in example sentence 82 (Tuomas Huumo, personal communication):

81. *Lõi raamatu keskelt lahti.*
 strike-PST:SG3 book:PRT from the middle open
 He/She opened the book **at the middle.** (Lit. ‘struck the book open from the middle’)
82. *haarasin teda käest*
 grab-PST:SG3 he:PRT hand:ELA
 ‘I grabbed his hand.’

There is an intriguing case of synonymy among the MIDDLE adpositions in Estonian. *Keset* and *keskel* can both be used felicitously with such singular landmarks as *mets* ‘forest’, *kõrb* ‘desert’, *linn* ‘town’, *päev* ‘day’, *aprill* ‘April’, *suvi* ‘summer’ etc. with apparently no meaning difference. Consider examples 83a-b and 84a-b:

83. a) *Maja asub metsa keskel.*
 house:NOM be-located-PRS:SG3 forest in the middle of
 ‘The house is located **in the middle of** the forest.’
- b) *Maja asub keset metsa.*
 house:NOM be-located-PRS:SG3 in the middle of forest
 ‘The house is located **in the middle of** the forest.’
84. a) *Töid alustati suve keskel.*
 works:PRT begin-PST:IMP summer:GEN in the middle of
 ‘The works were begun in the middle of the summer.’
- b) *Töid alustati keset suve.*
 works:PRT begin-PST:IMP in the middle of summer:PRT
 ‘The works were begun **in the middle of** the summer.’

It would be interesting to pursue a line of analysis, where the uses of these adpositions are taken to have meaning differences, claiming thus that they are different **construals** of the same situation. It has been suggested by Tuomas Huumo (personal communication) that these two uses may differ in their **perspective**. More specifically, the example sentence 83a *metsa keskel* construes the scene from a **global perspective** where the landmark is taken as a unitary bounded entity, and 83b *keset metsa* construes it from a **local perspective**, where the landmark is taken as substance surrounding the house. Clearly, this interesting proposal is worth looking into in greater detail, but unfortunately it is outside the scope of the present work and merits a separate study of its own.

There is also a slight semantic difference between Estonian *keset* and *keskel* in the temporal domain: if you do something *keset päeva* ('in the middle of the day'), it usually something you should not do or is uncommon at this point of time; however, if you do it *päeva keskel* ('in the middle of the day'), then the activity described is considered less uncommon (cf. examples 85a and 85b):

85. a) *Märtini võidulootused kadusid teise päeva keskel.* (WWW)
 Märtn:GEN chances-to-win:NOM be-lost-PST:PL3 second:GEN day:GEN in-the-middle-of
 'Märtn's chances to win were lost **in the middle of the second day.**'
- b) *Huvitav, mida mõtleb Eesti TV, kui ta keset päeva oratooriumi näitab?* (MCE)
 oratorio:PRT show-PRS:SG3
 'I wonder what does the Estonian TV think, when it shows the oratorio **in the middle of the day?**'

2.7 Discussion

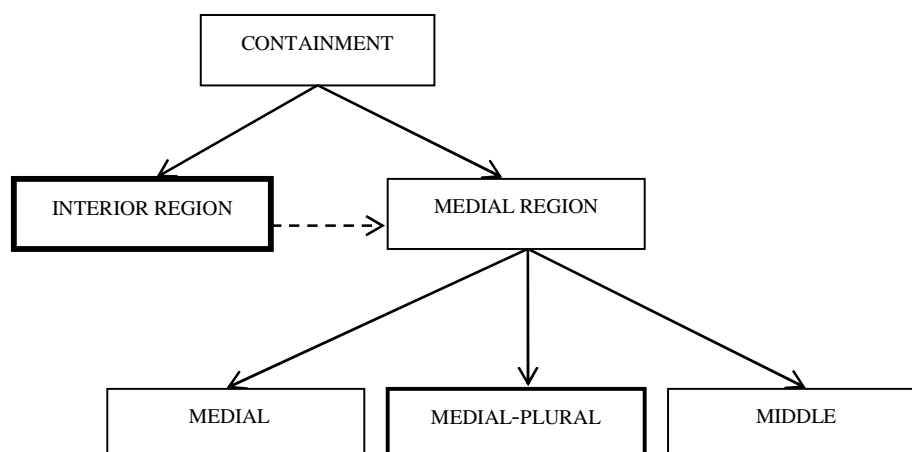
In this chapter, the semantic description of English and Estonian MEDIAL REGION adpositions was given. The description and hypotheses posited were based on the corpus analysis and to some extent on the experimental findings to be described in the next chapter. First of all, a general MEDIAL REGION category was posited for both English and Estonian MEDIAL REGION adpositions. In case of this general MEDIAL REGION category it was postulated that it formed a Langackerian network model and that MEDIAL REGION is an elaboration of CONTAINMENT schema and an extension of INTERIOR REGION category. The support for this postulation comes from the actual use of the English and Estonian MEDIAL REGION adpositions, including some of the more idiosyncratic uses.

The MEDIAL REGION category in both English and Estonian included further elaborations, that of MEDIAL, MEDIAL-PLURAL and MIDDLE. The next step in the analysis was to describe for both English and Estonian the semantics of the adpositions belonging to these sub-groups. For each sub-group a network was posited with a central schema and various elaborations. In the present thesis, Langackerian network model proved especially useful, as it enabled to account for a wide variety of adposition uses by postulating one central schema with its specific elaborations. The central schema for English and Estonian MEDIAL adpositions was a scene where the trajector was located in the intermediate position of two landmarks; for MEDIAL-PLURAL adpositions a scene where the trajector was located

in the intermediate position of a plural landmark; for MIDDLE adpositions a scene where the trajector was located at the centre region of a singular landmark.

The network model of the MEDIAL REGION category with one addition is once more presented in Figure 32. I postulate, that the MEDIAL-PLURAL group is the most central or prototypical member in the MEDIAL REGION category (indicated by the heavy line of this box). Although if we look at the frequency of the various MEDIAL REGION adpositions in both English and Estonian, then *between* and *vahel* are much more frequent than the other MEDIAL REGION adpositions⁷¹. However, I would here suggest that more important than the frequency of use, is the surround use or meaning of MEDIAL-PLURAL adpositions – the plural landmarks surround the trajector and hence imply a somewhat stronger sense of inclusion and containment.

Figure 32. Network of the MEDIAL REGION category



When comparing the English and Estonian MEDIAL REGION adpositions, very much similarity appears to be in the uses of these adpositions. Still, there are some interesting cases, as, for example, the use of Estonian *vahel* with singular landmarks. Moreover, another fascinating aspect about the MEDIAL REGION adpositions in both languages is that there are various instances of synonymy, e.g between *amid*, *amidst*, *among*, *amongst*, between *seas* and *hulgas*, between *keset* and *keskel*, between *in the middle of* and *in the centre of*. In case of the latter pair, it appears that *in the middle of* has maybe grammaticalized more than *in the centre of*. Differently from *in the middle of*, *in the centre*

⁷¹ See Appendix 1 for the overview of the corpus data.

of is not used in the temporal domain and is much less common also in other abstract uses. Moreover, the sequence of *in the middle of* seems to be more entrenched, because Google gave 8 070 000 results for this lexical unit and only 154 000 for the alternative *at the middle of*. However, there was no such huge gap between the frequencies of *in the centre of* (1 840 000 solutions) and *at the centre of* (1 270 000).

When we also compare the frequencies of *hulgas* and *seas*, then *hulgas* is more frequent than *seas* according to the *Eesti kirjakeele sagedussõnastik* (2002) and my own corpus analysis. However, I do believe that there are other factors besides mere frequency involved in these synonymous sets and each set merits a separate study in order to bring some light into this (at least for me, rather unusual linguistic situation – language does not normally tolerate (absolute) synonymy). Thus, it might prove useful to apply Langacker’s notions of profiling and perspective in trying to account for the semantic differences between these synonymous pairs.

One of the predominant characteristic of both the English and Estonian MEDIAL REGION adpositions is that they can all be used with plural landmarks, as can be seen from the following example sentences.

86. a) *Do you see the pool **between** the trees?* (BNC)
 b) *But tonight there was no one **among** the trees.* (BNC)
 c) *I can see them now, standing in the middle of the shelf, **amidst** college journals, old diaries.* (BNC)
 d) *In Finland some of these sites are even found **in the middle of** frozen lakes.* (BNC)
 e) ***In the centre of** the buildings was a square parade ground with a forlorn flagpole.* (BNC)
87. a) *Esialgu kulges tee villade vahel.* (EKSS)
 at-first run-PST:SG3 road:NOM villas:GEN between
 ‘At first the road ran **between** the villas.’
 b) *Silmasin Mallet laadaliste seas.* (EKSS)
 notice-PST:SG1 Malle:PRT fair-goers:GEN among
 ‘I noticed Malle **among** the fair-goers.’
 c) *Muude paberite hulgas seda kirja ei olnud.* (EKSS)
 other:GEN papers:GEN among this:PRT letter:PRT not be-PST:PCPL
 ‘This letter was not **among** the other papers.’
 d) *Maja asub puude keskel.* (EKSS)
 house:NOM be-located-PRS:SG3 trees:GEN in the middle of
 ‘The house is located **in the middle of** the trees.’
 e) *Poiss lamas aasal keset lilli.* (EKSS)
 boy:NOM lie:SG3 meadow:ADE in the middle of flowers:PRT
 ‘The boy lay in the meadow **in the middle of** the flowers.’

However, which particular adpositions is used, depends on what the speaker wishes to convey and how he or she construes the scene. It was postulated that a number of attributes may influence the use of these adpositions with plural landmarks. The experimental findings described in the next chapter discuss whether such postulations can also be verified experimentally.

One of the thorniest issues in the above analysis, for me, was how to adequately describe the lative and separative members of Estonian MEDIAL REGION adpositions. It was claimed that these should certainly be taken together, as the uses of these adpositions instantiate one and the same central schema, with the addition of direction and motion for the lative and separative member. But what kind of relationships exactly hold between these members, i.e. is any one member the prototype and are the other members then elaborations or extensions, is yet to be determined and awaits a larger scale research about the Estonian three-member set adpositions.

CHAPTER 3. EXPERIMENTAL FINDINGS ON ENGLISH AND ESTONIAN MEDIAL REGION ADPOSITIONS

3.1 Introduction

In cognitive linguistics, there is a widespread concern for providing experimental support for the studies conducted. A recurring question is whether, for example, the various network models proposed can be considered psychologically real (Sandra and Rice 1995). Various experimental methods hold a central place in the recently published book *Methods in Cognitive Linguistics* (Gonzalez-Marquez et al. 2007). Indeed a vast majority of the cross-linguistic studies done on spatial language and other linguistic phenomena within cognitive linguistics nowadays employ such methods. The present author has been influenced by such cognitive-functional studies as Carlson and Van der Zee (2005), Coventry and Garrod (2004), Feist and Gentner (2003), and Feist (2000). These researches have looked at how different attributes of the scene (e.g. geometry, animacy, and function of trajector and landmark) affect the speakers' uses of adpositions. During the corpus analysis a number of possible attributes that could affect the use of both English and Estonian MEDIAL REGION adpositions arose. Thus, it was decided to devise an experiment that would test whether such attributes indeed influence the meaning.⁷²

The experimental findings described in this chapter pertain to one and the same experiment, which was carried out with three different groups of subjects. Although the main idea of the experiment is one and the same, each group had a slightly modified version, because of practical considerations. The basic division is according to whether English or Estonian adpositions were tested: section 3.2 describes the results for English and section 3.3 for Estonian. Within the English group, there is a further subdivision: the experiment was carried out both with native speakers (section 3.2.1) and with those who major in English at the University of Tartu (section 3.2.2).

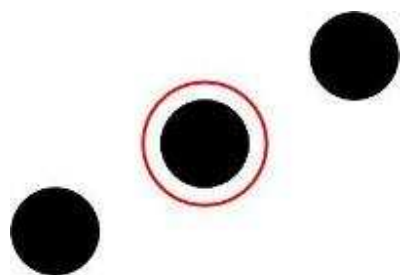
⁷² I would here like to thank Michele Feist who was the instructor of my group at the Empirical Methods in Cognitive Linguistics Workshop held in Murcia in October 2006 that I attended. I would not have been able to devise such an experiment were it not for the practical skills acquired during the workshop and the advice received at later stages of the present study.

The experiment was designed to verify some of the assumptions made in the semantic analysis of English and Estonian MEDIAL REGION adpositions described in Chapter 2. During the corpus analysis, it appeared that three attributes of a spatial scene and its participants (i.e. the trajector and landmarks) might influence the use of these adpositions. The three attributes were *quantity* – the number of landmark objects; *centrality* – the relative central position of the trajector with respect to landmarks; and *uniformity* – the sameness or similarity of the trajector and landmarks. During the semantic analysis it was concluded that the English prepositions *between*, *among*, *amid*, *in the middle of* and the Estonian adpositions *vahel*, *seas*, *hulgas*, *keskel* could all be used together with a plural landmark. However, it was claimed that they are not wholly synonymous and that there must be other attributes that influence the choice. Centrality was proposed as the additional attribute for the adpositions *in the middle of* and *keskel*. The attribute of uniformity is not as clear, but it pertains to the idea that such adpositions like *among*, *amid*, *seas*, *hulgas* are quite often used when the trajector and landmarks are identical or similar, e.g. *Ashes grow among other trees*.

The specific aims and hypotheses will be discussed under each language separately. The participants and the procedure for each group will be described separately. Here will be provided the description of the stimuli and the basic design of the experiment, as these are the same for both of the languages and all of the groups.

Stimuli. A set of 18 pictures was created with *Microsoft Word* using three various autosshapes: circles, triangles, and stars. These stimuli depicted one trajector located among two, three, or six landmarks at two levels of centrality, for a total of eighteen pictures. All of the objects were black. The object in each picture that corresponded to the trajector was marked with a red circle. Example stimulus is shown in Figure 33.

Figure 33. Trajector located between two landmarks



Design. In the experiment, a 3 x 3 x 2 design was used. The three manipulations were quantity of the landmarks (three levels), uniformity of the trajectory and the landmarks (three levels), and centrality of the trajectory (two levels). All three variables were varied within subject. The three levels of quantity are: 2 LM – two landmarks, 3 LM – three landmarks, 6 LM – six landmarks; the three levels of uniformity are: U1 – the trajectory and landmarks are identical, U2 – the landmarks are identical, but the trajectory is different, U3 – there are two different types of landmarks and a different trajectory; the two levels of centrality are: C1 – the trajectory is exactly at the centre of landmarks, C2 – the trajectory is not at the centre of landmarks. Appendix 2 shows the different levels for these three manipulations.

Having set out the basic design of the experiment, I will now turn to the different groups and describe the specific aims and hypotheses, participants, procedure, and the results.

3.2 English MEDIAL REGION Adpositions

The English adpositions included in the experiment were *between*, *among*, *amid*, and *in the middle of*. Experimental findings on the English language are further divided into two: the first group of participants consists of native speakers and the second of second language users. The set of hypotheses is the same for both groups. As noted above, my aim was to examine the influence of the three variables or attributes of the scene (quantity, uniformity, centrality) on the applicability of these adpositions. It was thus hypothesised that all of these attributes affect the use of *between*, *among*, *amid*, *in the middle of*. More specifically, I postulated the following four hypotheses:

Hypothesis 1: The **quantity** of landmarks affects the use of *between* – the greater the quantity of landmarks, the less probable it is that *between* is selected to describe the depicted spatial scene.

Hypothesis 2: The **centrality** of the trajectory affects the use of *in the middle of* – the more centrally the landmark is positioned, the more probable it is that *in the middle of* is chosen from among the prepositions to describe the spatial scene.

Hypothesis 3: The use of the preposition *among* is affected by the **quantity** of landmarks, the **uniformity** of trajector and landmarks, and the **centrality** of the trajector – the greater the quantity of the landmarks, the greater the uniformity of the trajector and landmark, and the less central the position of the trajector, the more probable it is that *among* is selected to describe the spatial scene.

Hypothesis 4: The use of the preposition *amid* is affected by the **quantity** of landmarks and the **centrality** of the trajector – the greater the quantity of the landmarks and the greater the centrality of the trajector, the more probable it is that *amid* is selected to describe the spatial scene.

3.2.1. Group 1: Native speakers

Participants. 13 (5 female and 6 male) British English native speakers participated in the experiment⁷³.

Procedure. Stimuli were presented to them via the Internet, using the format of *eFormular*⁷⁴. Stimuli were presented in one randomized block consisting of the 18 pictures in random order. For each picture, participants were given the four prepositions and the following sentence:

between among amid in the middle of

The red-circled object is objects.

Participants were told to tick the preposition they thought most appropriately described each of the pictures presented.

Results and Discussions

As predicted, participants' choice of *between*, *among*, *amid*, *in the middle of* to describe the scenes was influenced by quantity and centrality, but less so by uniformity. I will first present the total number of instances and proportions of the different responses for different prepositions (Table 23); there were 234 responses in total (13 participants x 18

⁷³ Compared to the number of participants in other groups, this group is the smallest due to various practical and other reasons.

⁷⁴ <http://www.eformular.com>

pictures). Table 23 indicates that *among* was the most frequently chosen adposition; somewhat surprisingly, *amid* was considerable less frequent⁷⁵.

Table 23. Proportion of preposition responses

Preposition	Number of responses	Proportion of responses
between	71	30.3%
among	109	46.6%
amid	13	5.6%
in the middle of	41	17.5%
TOTAL	234	100%

Figure 34 represents the proportion of responses of each preposition for the three levels of quantity. Within each level, the total proportion of the prepositions is 100%. The effect of the landmarks quantity was demonstrated by an increase in *among* and *amid* responses as the quantity was increased and by a decrease in *between* responses as the quantity was increased. *In the middle of* presents an interesting case, where it is relatively frequently used with two landmarks, but when there are three landmarks, the proportion of *in the middle of* responses decreases and then surges again when there are six landmarks.

Figure 34. Proportion of preposition responses according to quantity

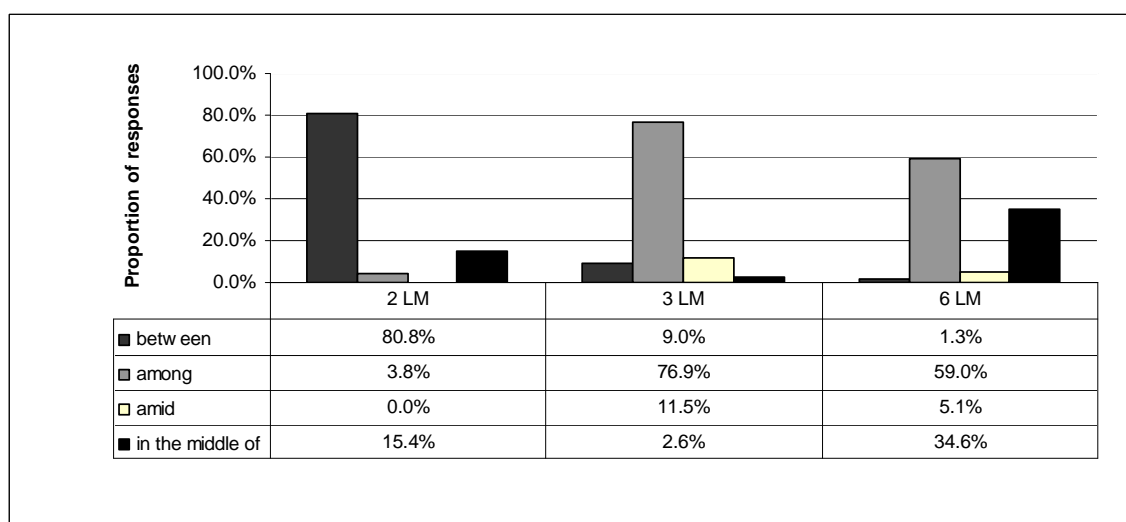


Figure 35 represents the proportion of responses of each preposition for the three levels of uniformity. Here, however, no significant effects were found when the uniformity

⁷⁵ Compare Appendix 1, where the number of instances of *amid* in my corpus is given; there the number of instances for the spatial domain is relatively small as well.

of landmarks and the trajector was decreased. The proportion of responses stays more or less the same for each preposition.

Figure 35. Proportion of preposition responses according to uniformity

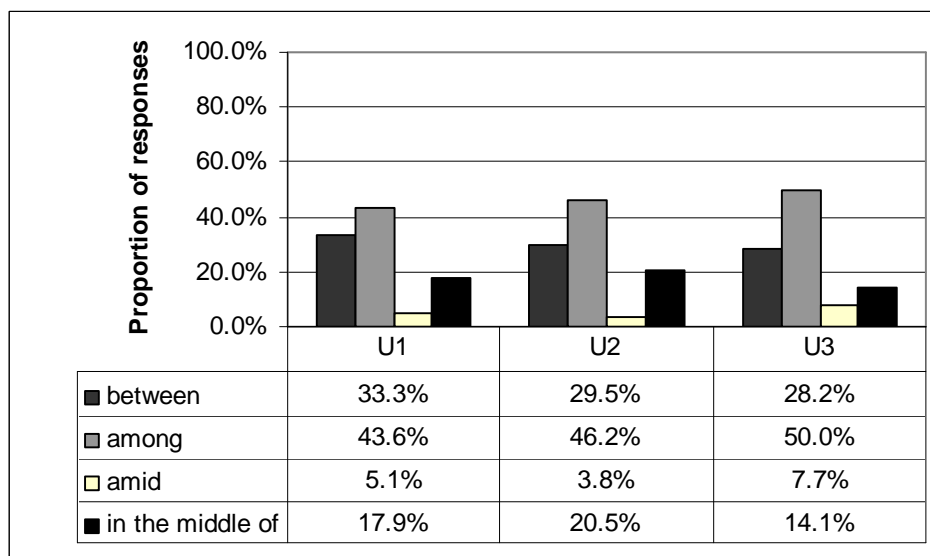
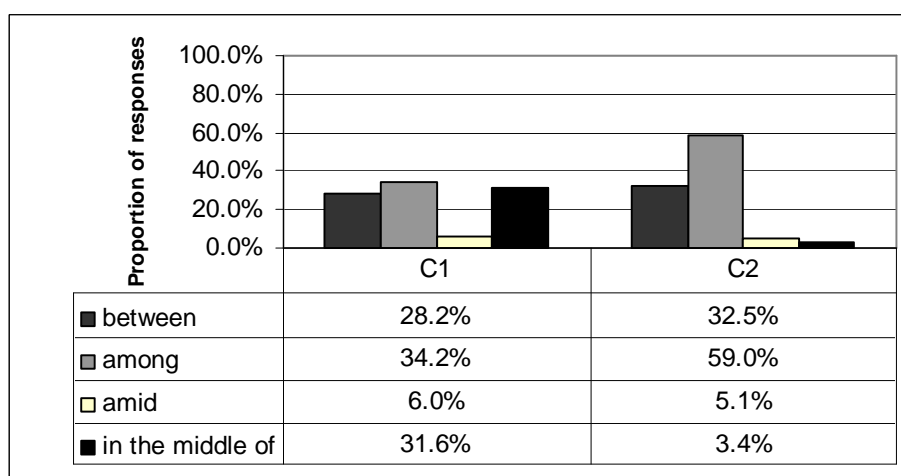


Figure 36 represents the proportion of responses for each preposition for the two levels of centrality. The effect of the trajector's centrality was demonstrated by an increase in *among* responses and a decrease in *in the middle of* responses as the centrality was decreased. For the other two prepositions, *between* and *amid* no significant effects were detected.

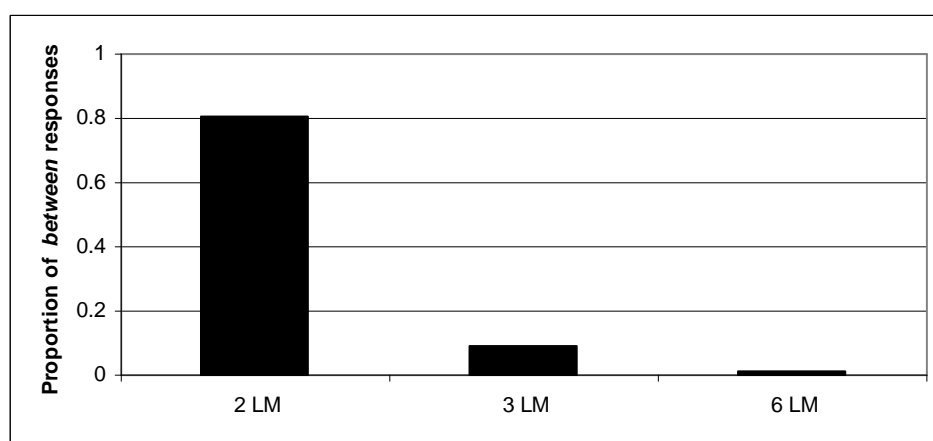
Figure 36. Proportion of preposition responses according to centrality



I will now turn to the discussion of the specific hypotheses posited.

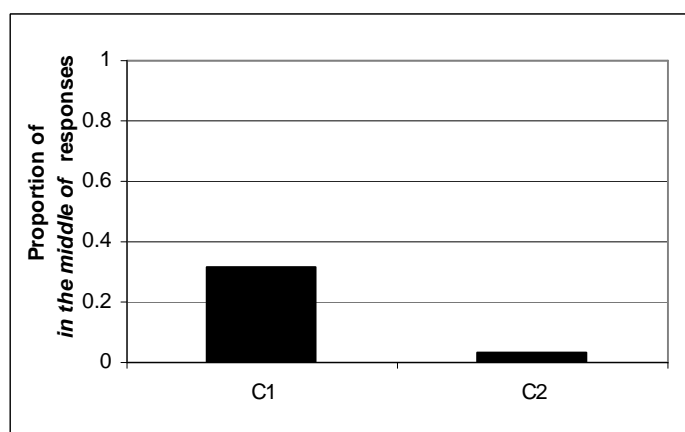
Hypothesis 1. During the semantic analysis it was posited that the preposition *between* is used when there are two landmarks. This hypothesis was confirmed: the effect of the landmarks' quantity on the use of this preposition was demonstrated by a decrease in *between* responses as the quantity was increased (Figure 37).

Figure 37. Proportion of *between* responses as a function of the quantity of landmarks



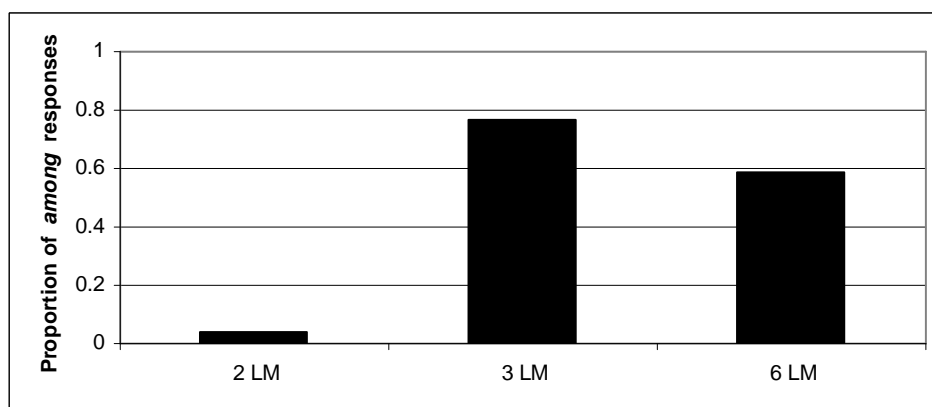
Hypothesis 2. As predicted, the centrality of the trajector affected the applicability of the preposition *in the middle of*. The effect of the trajector's centrality was demonstrated by a decrease in *in the middle of* responses as the centrality decreased (Figure 38; C2 indicates the lower level of centrality).

Figure 38. Proportion of *in the middle of* responses as a function of the centrality of the trajector



Hypothesis 3. For the preposition *among* a number of things were posited. First of all, as expected I found that the participants' choice for *among* was influenced by the quantity of landmarks – there was an increase in *among* responses as the quantity increased (Figure 39).

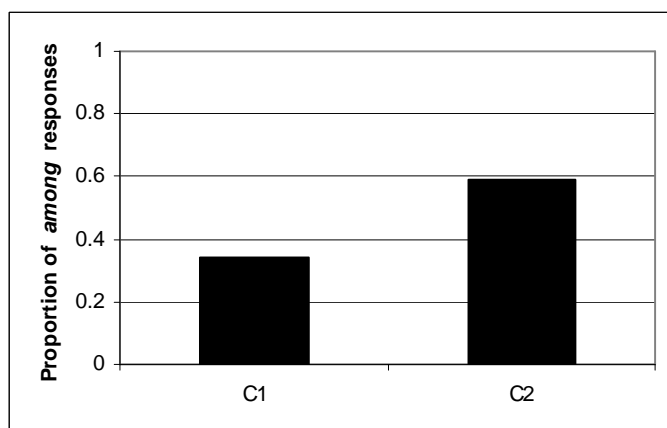
Figure 39. Proportion of *among* responses as a function of the quantity of landmarks



The proportion of *among* responses at the levels 3LM and 6LM is considerably bigger than at the level 2LM. Nevertheless, this trend is not linear; the proportion of responses at the 3LM level is higher than at the 6LM level. This partial bell-curve can be explained by going back to Figure 34 above, where it can be seen that the proportion of *in the middle of* responses for pictures that contained six landmarks is relatively big. Thus, when the trajectory was exactly at the centre position with respect to these six landmarks, the participants predominantly chose *in the middle of*; otherwise *among* was selected.

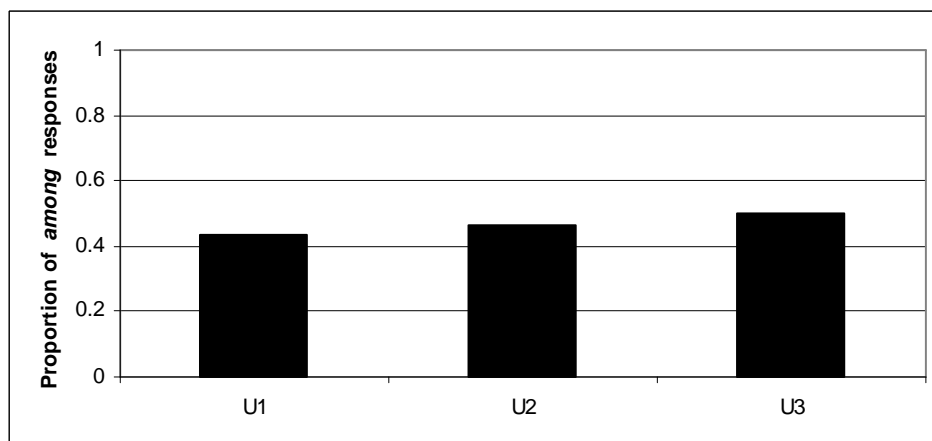
Furthermore, as expected the centrality of the trajectory also affected the applicability of *among* – there was an increase in *among* responses as the centrality decreased (Figure 40; C2 indicates the lower level of centrality).

Figure 40. Proportion of *among* responses as a function of the centrality of the trajector



The third effect hypothesised pertained to the use of *among* and the attribute of uniformity. I anticipated that there will be a decrease in the *among* responses when there is less uniformity; however, there was an opposite effect, though very slight (Figure 41; U1 is the level where the trajector and landmarks are identical). As the uniformity decreased, the proportion of *among* responses increased.

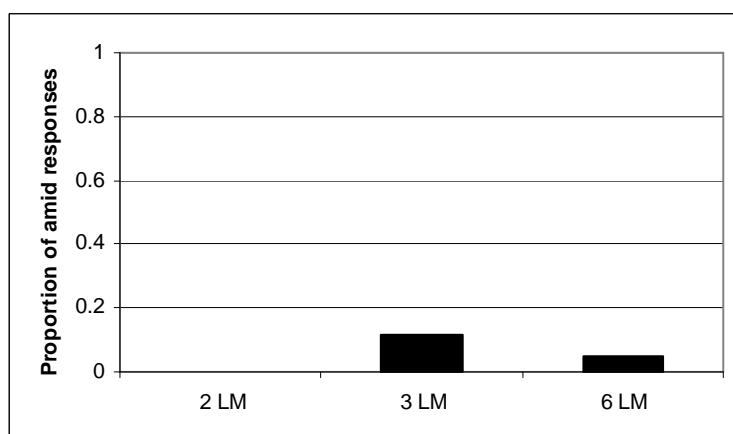
Figure 41. Proportion of *among* responses as a function of uniformity



Of course, the limited number of responses and the design of the experiment prevent from drawing any far-reaching conclusions, but the issue of uniformity, in my opinion, deserves attention and alternative experiments could be devised in testing how the uniformity or sameness of objects in a scene influences the choice between different MEDIAL REGION adpositions. At the same time, it may very well be that there indeed is no special effect, as can be concluded from the present small-scale study.

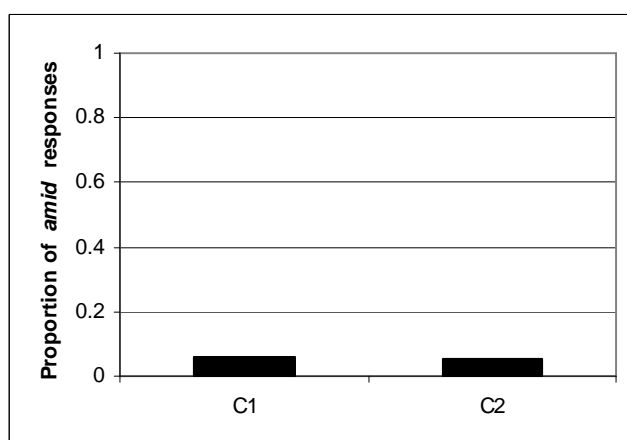
Hypothesis 4. As a last hypothesis it was anticipated that the use of *amid* is influenced by the quantity of landmarks and the centrality of the trajectory. As already noted above, the very small total number of *amid* responses might indicate its relatively infrequent use for the spatial domain, and at the same time prevents from stating anything certain about the use of this preposition. Furthermore, it is worth pointing out that the preposition *amid* was only used by 5 participants out of 13 (one participant had used it 6 times, while the total number of *amid* uses was only 13); for the remaining 8 this preposition appears not to be used in their idiolect for describing such spatial scenes as used in this experiment. However, what might be claimed, with certain reservations, is that *amid* is not normally used with two landmarks, as there were 0 responses of *amid* in this case (Figure 42).

Figure 42. Proportion of *amid* responses as a function of quantity of landmarks



The other trend that I expected was connected to the idea of *amid* being a MIDDLE preposition, i.e. expressing central location. I anticipated the number of *amid* uses to decrease as the level of centrality decreased, but there was almost no difference (Figure 43). But again, as there was such a limited number of responses with *amid*, another kind of experiment would have to be devised in order to test these hypotheses about the use of *amid*.

Figure 43. Proportion of *amid* responses as a function of centrality of the trajector



To conclude, from the posited hypotheses, only three can be confirmed for the present study with some certainty: the preposition *between* is predominantly used with two landmarks, *in the middle of* is influenced by the centrality of trajector, as is *among*, and the use of *among* is bigger when there are more than two landmarks. Surprisingly, I found no effect for the uniformity of landmarks and the trajector. Thus, further experiments would have to be devised in determining whether this attribute influences the use of English MEDIAL REGION prepositions or not. The other two attributes, quantity and centrality, showed an effect.

3.2.2. Group 2: Second language learners

Participants. 20 (19 female and 1 male) Tartu University English philology students participated in the experiment. All reported having learnt English for at least 10 years; the mother tongue of 19 participants was Estonian and one participant was a native speaker of Russian.

Procedure. Stimuli were presented in one randomised block consisting of the entire set of 18 pictures in random order. Each of the stimuli was presented for 10 seconds with the data projector on the wall with three seconds between each stimulus. Participants were given answer sheets containing 18 sentences of the same form:

The red-circled object is BETWEEN / AMONG / IN THE MIDDLE OF objects.

Participants were told to mark the preposition they felt most appropriately described each of the 18 pictures presented.

Results and Discussions

The set of hypothesis posited was the same as with native speakers. The aim here was to see, whether the results of learners of English differ significantly in comparison with that of the native speakers. As there was such a low number of *amid* responses from the native speakers, this preposition was excluded from the set of English MEDIAL REGION prepositions used with this group. The rest of the prepositions were the same.

As predicted, participants' choice of *between*, *among*, *in the middle of* to describe the scenes was influenced by quantity and centrality, but less so, again, by uniformity. Table 24 presents the total number of instances and proportions of the different prepositions received in response in Table 24; there were 360 responses in total (20 participants x 18 pictures). This table indicates that *among* was again the most frequently chosen adposition.

Table 24. Proportion of preposition responses

Preposition	Number of responses	Proportion of responses
between	101	28.1%
among	185	51.4%
in the middle of	74	20.6%
TOTAL	360	100%

Figure 44 represents the proportion of responses for each preposition for the three levels of quantity. Within each level, the total proportion of the prepositions is 100%. Similarly to the results of native speakers, the effect of the landmarks quantity was demonstrated for all the three prepositions: there was an increase in *among* and *in the middle of* responses and a decrease in *between* responses as the quantity was increased. When comparing Figure 44 with the same figure for native speakers (Figure 34 above), then there are a couple of things worth pointing out. First of all, the proportion of *among* responses for quantity 2LM was considerably smaller with native than with L2 speakers. Another difference is that native speakers gave more *in the middle of* responses for quantity 2LM than L2 speakers did. It seems that for quantity 3LM, the native speakers allow the prepositions *between* to be used more with plural landmarks than L2 speakers do.

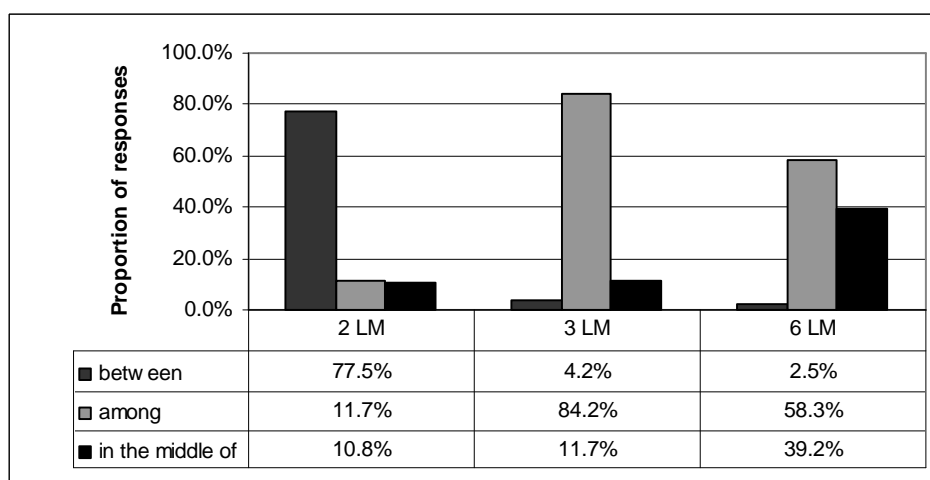
Figure 44. Proportion of preposition responses according to quantity

Figure 45 represents the proportion of responses of each preposition for the three levels of uniformity. Similarly to the native speakers, L2 speakers responses showed no effect here. The relative proportion for all of the prepositions is more or less the same for all of the three levels of uniformity.

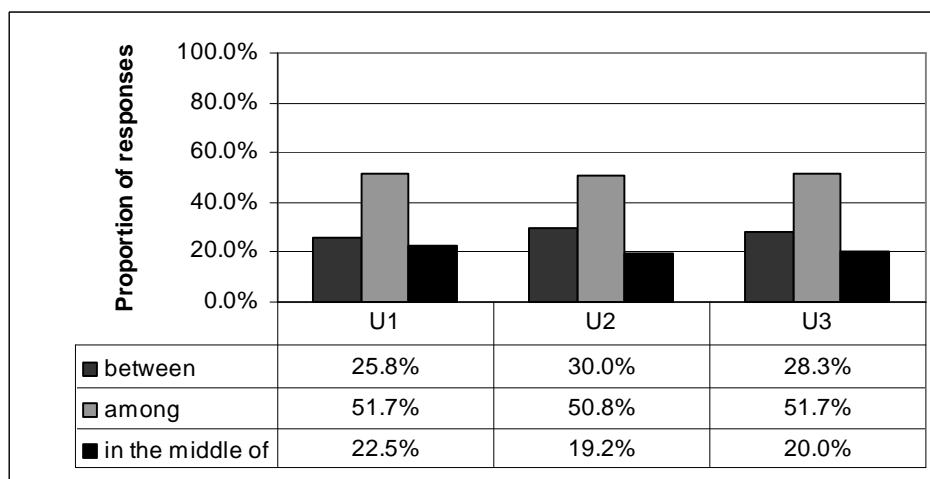
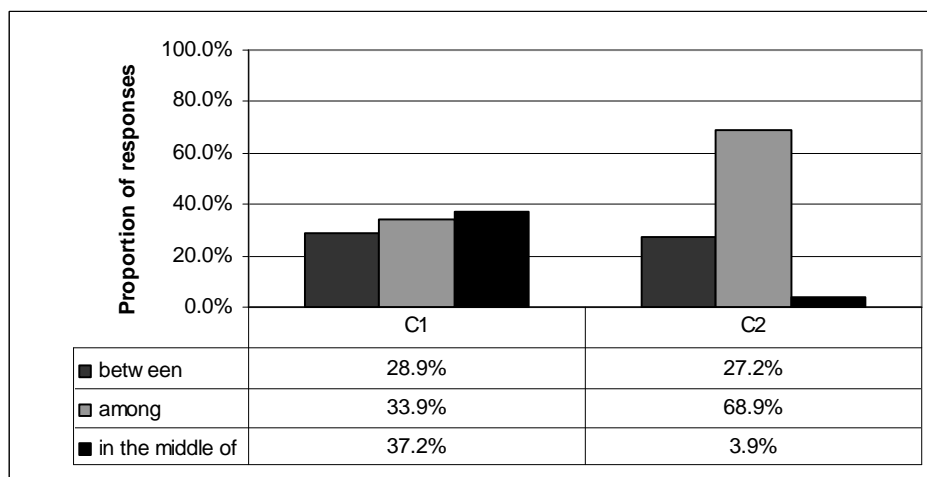
Figure 45. Proportion of preposition responses according to uniformity

Figure 46 represents the proportion of responses for each preposition for the two levels of centrality. Here, the responses of native speakers and L2 learners are almost the same. The effect of the trajectory's centrality was demonstrated by an increase in *among* responses and a decrease in *in the middle of* responses, as the centrality was decreased. For *between* no significant effects were detected. But if we compare the *between* responses for these two groups, then the proportion of *between* responses in the native speaker's group

slightly increased as the level of centrality was decreased, but for L2 speakers it slightly decreased as the level of centrality was decreased.

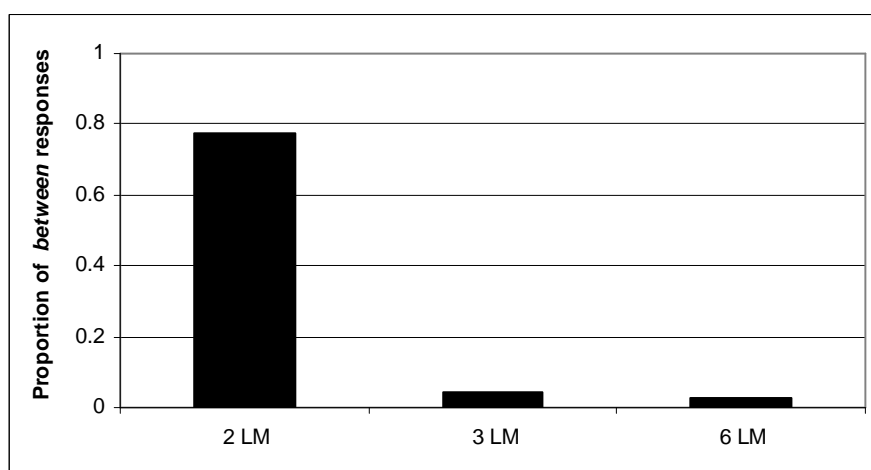
Figure 46. Proportion of preposition responses according to centrality



I will now turn to the discussion of the specific hypotheses posited.

Hypothesis 1. As was expected, *between* is used when there are two landmarks. The effect of the landmarks' quantity was demonstrated by a significant decrease in *between* responses as the quantity was increased (Figure 47). As was already mentioned, the native speakers seem to tolerate *between* also for quantity 3LM, while L2 learners are less tolerant in this respect.

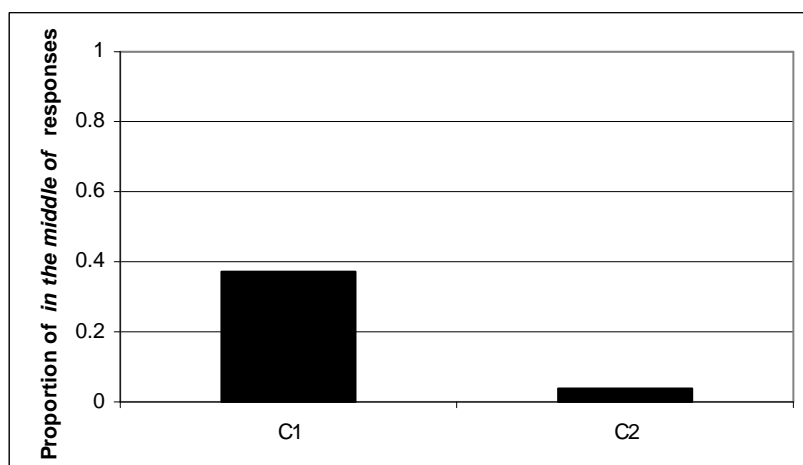
Figure 47. Proportion of *between* responses as a function of the quantity of landmarks



Hypothesis 2. I predicted that the centrality of the trajector affected the applicability of the preposition *in the middle of*. The hypothesis that *in the middle of* is used

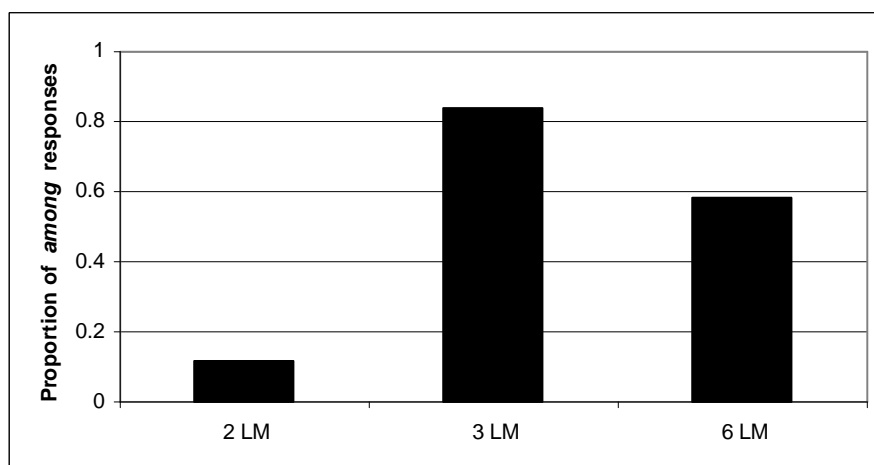
when the trajector is located centrally was confirmed here as well, as the effect of the trajector's centrality was demonstrated by a decrease in *in the middle of* responses as the centrality decreased (Figure 48; C2 indicates the lower level of centrality).

Figure 48. Proportion of *in the middle of* responses as a function of the centrality of the trajector



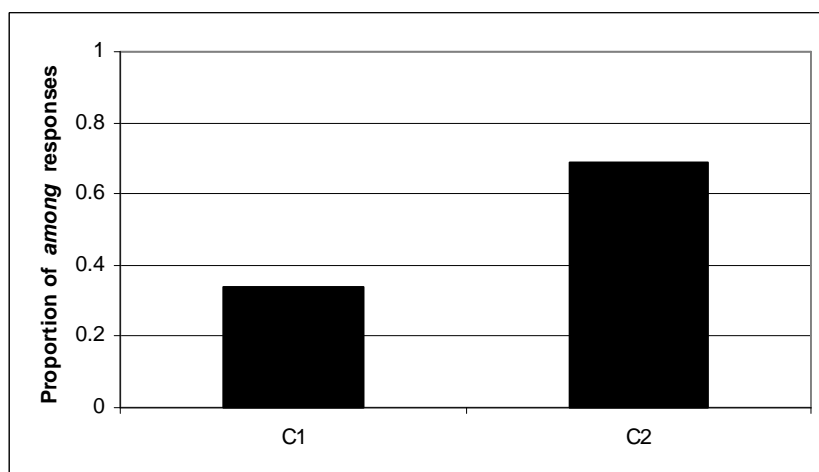
Hypothesis 3. For the preposition *among* a number of things were posited. First of all, as expected I found that the participants' choice for *among* was influenced by the quantity of landmarks – there was an increase in *among* responses as the quantity increased (Figure 49). Similarly to the responses of native speakers, the proportion of *among* responses is not linear here either. The reason is the same as given above, when discussing the results of native speakers.

Figure 49. Proportion of *among* responses as a function of the quantity of landmarks



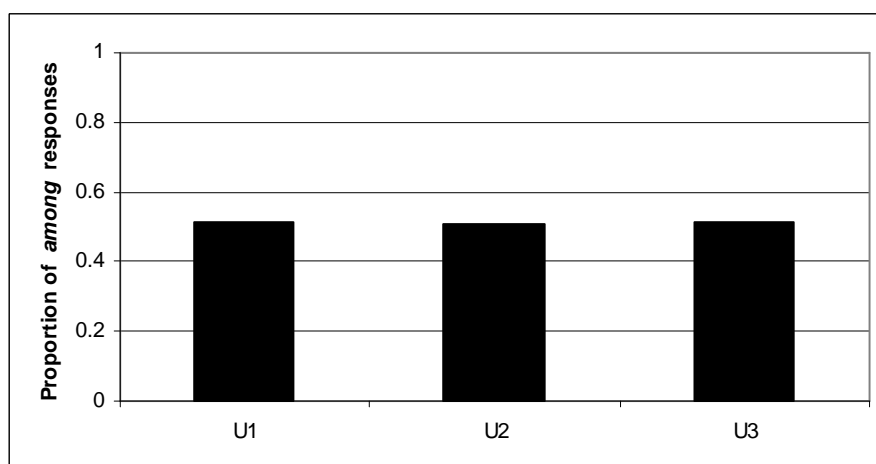
Furthermore, as expected the centrality of the trajector also affected the applicability of *among* – there is an increase in *among* responses as the centrality decreased (Figure 50; C2 indicates the lower level of centrality).

Figure 50. Proportion of *among* responses as a function of the centrality of the trajector



The third effect hypothesised was related to the attribute of uniformity and the use of *among*. I anticipated that there will be a decrease in the *among* responses when there is less uniformity; however, as with native speakers, there was no such effect (Figure 51). As the uniformity decreased, there was no significant change in the proportion of *among* responses. These results once more seem to indicate that uniformity probably does not influence the use of *among* or indeed any other preposition included in the study.

Figure 51. Proportion of *among* responses as a function of uniformity



As is clear from the above discussion then there are no significant differences between native speakers' and L2 speakers' use of these English MEDIAL REGION adpositions. At least for the set of hypotheses posited similar results were obtained. For me, an interesting small difference was between the proportion of *between* responses at the second level of quantity, i.e. when there were three landmarks. Here, the native speakers seem to use *between* more, than L2 speakers do. Taking into consideration that the vast majority of my L2 group participants were native speakers of Estonian, I would have thought that their use of *between* would be higher for the second level of quantity, because their mother tongue might influence the use of their adposition. It seems to be that the Estonian *vahel* could be less demanding about the dual landmark, because it does not have the numeral *two* in its semantics, as does the English *between*. But once again, the small number of native speaker responses does not permit to draw any far-reaching conclusions.

Although the attribute of uniformity did not show any effect in either group, in my opinion, the issue of uniformity deserves more attention. Alternative experiments should be devised to test how the uniformity or sameness of objects in a scene influences the choice of the preposition. Unfortunately, there is no space to look further into this issue in the present thesis.

3.2 Estonian MEDIAL REGION adpositions

The Estonian adpositions included in this experiment were *vahel*, *seas*, *hulgas*, *keskel*. As noted above, I examined the influence of three attributes of the participants in the scene (quantity, uniformity, centrality) on the applicability of these Estonian MEDIAL REGION adpositions. It was hypothesised that all of these attributes affect the use of *vahel*, *seas*, *hulgas*, *keskel*. More specifically, I postulated the following four hypotheses:

Hypothesis 1: The adposition *vahel* is used, when there are two landmarks. The **quantity** of landmarks affects the use of *vahel* – the greater the quantity of landmarks, the less *vahel* is selected to describe the depicted spatial scene.

Hypothesis 2: The adposition *keskel* is used, when the trajector is located in a central position with respect to the landmarks. The **centrality** of the trajector affects the use of

keskel – the more centrally the landmark is positioned, the more probable it is that *keskel* is chosen to describe the spatial scene.

Hypothesis 3: The use of the adpositions *seas* and *hulgas* is affected by the **quantity** of landmarks, the **uniformity** of the trajector and landmarks, and the **centrality** of the trajector; the greater the quantity of the landmarks, the greater the uniformity between the trajector and landmarks, and the less central the position of the trajector, the more probable it is that *seas* and *hulgas* are selected to describe the spatial scene. I did not have any special expectations why participants should rather choose *seas* than *hulgas* or vice versa.

Participants. 47 Tartu University undergraduates participated in the experiment. All reported being native speakers of Estonian.

Procedure. Stimuli were presented in one randomised block consisting of the entire set of eighteen pictures in random order. Each of the stimuli was presented for ten seconds with the data projector on the wall with three seconds between each stimulus. Participants were given booklets containing sentences of the form:

Punase ringiga tähistatud objekt on objektide *seas/hulgas/vahel/keskel*.

(‘The red-circled object is *among/between/in the middle of* objects’.)

Participants were told to mark one of the adpositions to make each sentence describe the corresponding picture.

Results and Discussions

As predicted, participants’ choice of *vahel*, *seas*, *hulgas*, and *keskel* to describe the scenes was influenced by quantity and centrality. Nevertheless, again surprisingly no effect was found for the third attribute, uniformity. Table 25 presents the total number of instances and proportions of the different responses for different adpositions; there were 846 responses in total (47 participants x 18 pictures). This table indicates that *vahel*, *seas*, *hulgas* were the most frequently chosen adpositions. However, if we take *seas* and *hulgas* as synonymous, then the table is similar to the English data in that *among*, *seas*, *hulgas* were much more frequently chosen in this experiment than *between*, *in the middle of*, *vahel*, *keskel*. When comparing *seas* and *hulgas* with each other, then *hulgas* was more often chosen than *seas*. As an interesting note, for the majority of the 47 participants, both *seas*

and *hulgas* seem to be synonymous, there is a more or less equal proportion of *seas* and *hulgas* responses. However, 2 participant had chosen *hulgas* 12 and 10 times respectively, neither had chosen *seas* for any of the pictures. At the same time, 1 participant chose *seas* 10 times and *hulgas* only twice.

Table 25. Proportion of adposition responses

Preposition	Number of responses	Proportion of responses
vahel	233	27.5%
keskel	170	20.1%
seas	207	24.5%
hulgas	236	27.9%
TOTAL	846	100%

Figure 52 presents the proportion of responses of each preposition for the three levels of quantity. Within each level, the total proportion of the prepositions is 100%. The effect of the landmarks' quantity was demonstrated by an increase in both *seas* and *hulgas* responses and a decrease in *vahel* responses as the quantity was increased. As with the English preposition *in the middle of*, there is something interesting going on with *keskel*: the proportion of *keskel* responses falls at quantity 3LM, but then surges at quantity 6LM.

Figure 52. Proportion of adposition responses according to quantity

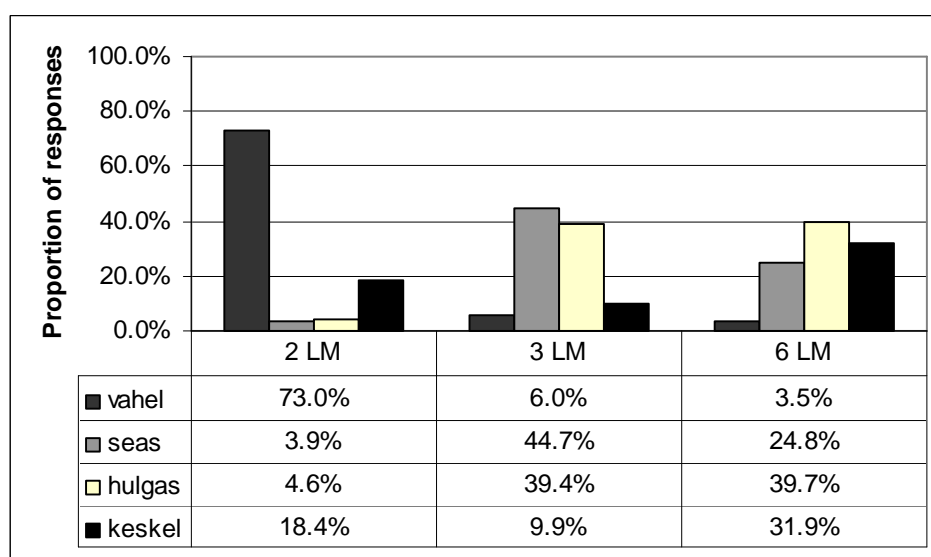


Figure 53 represents the proportion of responses of each adposition for the three levels of uniformity. As was the case with both groups of English language participants, there seems to be no effect of uniformity.

Figure 53. Proportion of adposition responses according to uniformity

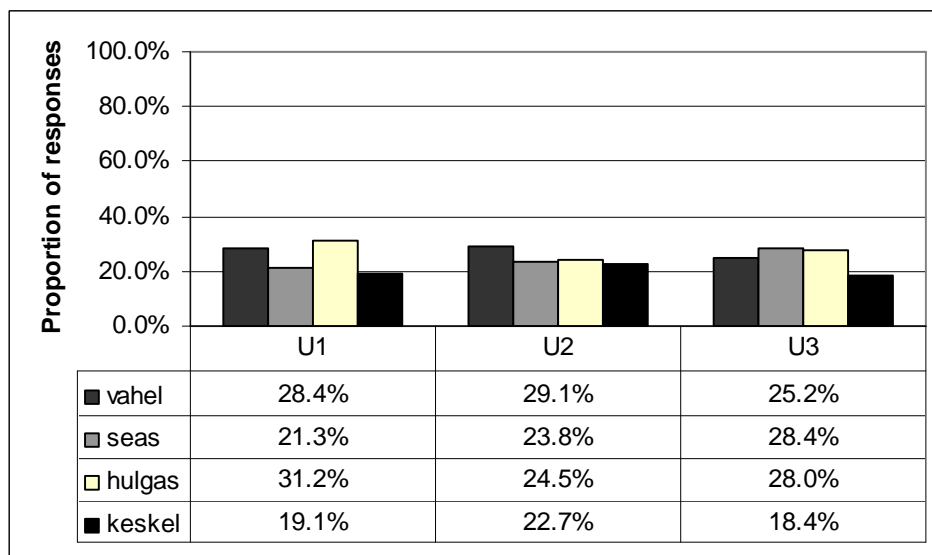
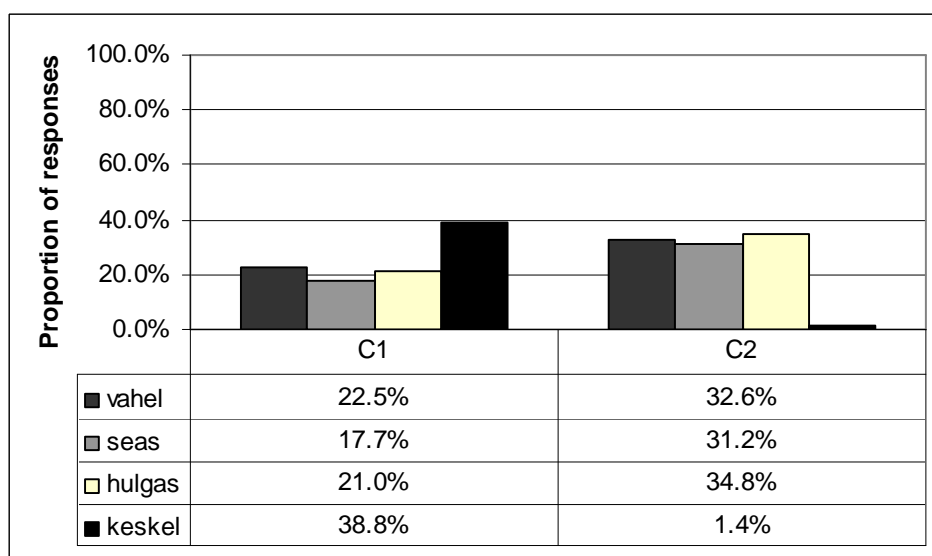


Figure 54 represents the proportion of responses for each adposition for the two levels of centrality, where C2 refers to the lower level of centrality. The effect of the trajector's centrality was demonstrated by a slight increase in *seas*, *hulgas*, *vahel* responses and a more significant decrease in *keskel* responses, as the centrality was decreased.

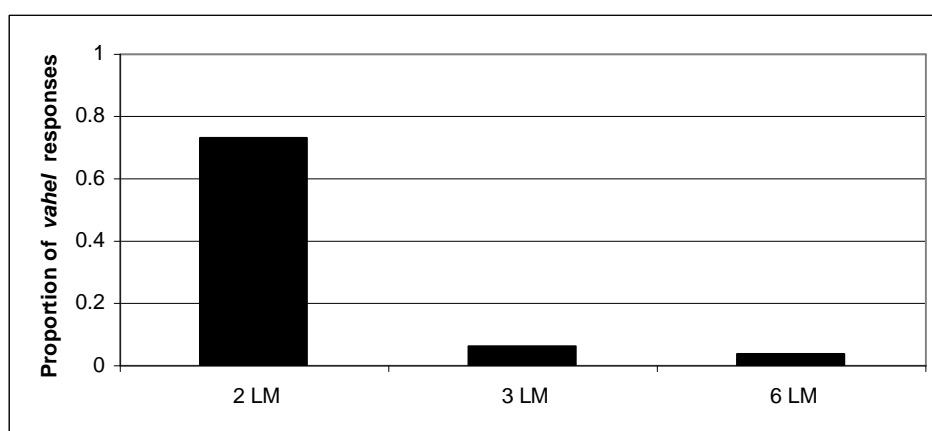
Figure 54. Proportion of adposition responses according to centrality



I will now turn to the discussion of the specific hypotheses posited. As the hypotheses are of the same nature, I will analyse the Estonian results by comparing them with the results for English.

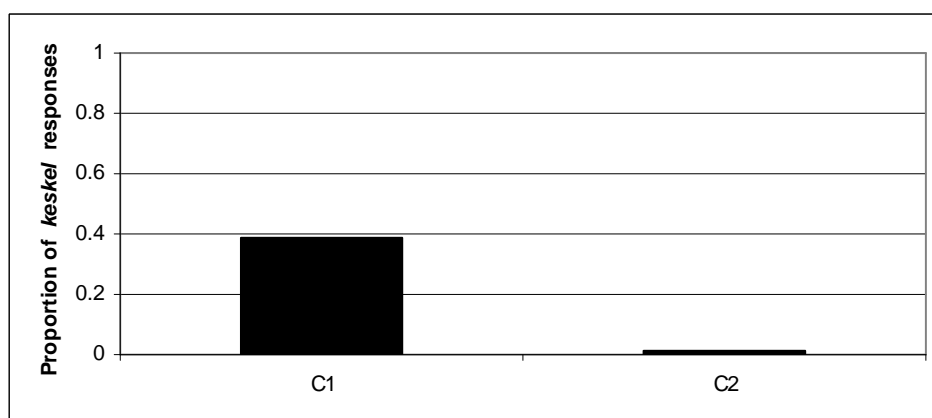
Hypothesis 1. It was posited that the quantity of landmarks influences the applicability of the adposition *vahel*. This was confirmed as the effect of the landmarks' quantity was demonstrated by a decrease in *vahel* responses as the quantity was increased (Figure 55). In this respect, *between* and *vahel* behave in the same way.

Figure 55. Proportion of *vahel* responses as a function of the quantity of landmarks



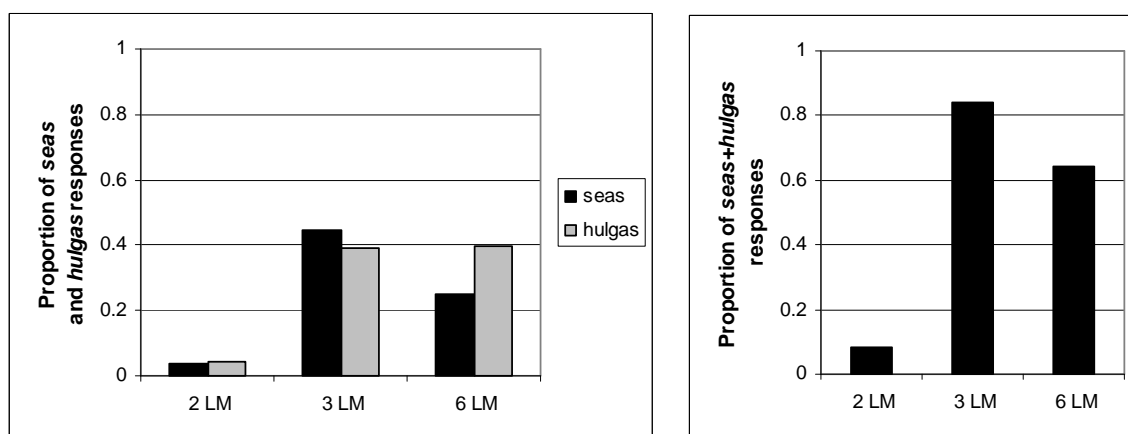
Hypothesis 2. As predicted, the centrality of the trajector affected the applicability of the adposition *keskel*. The effect of the trajector's centrality was demonstrated by a decrease in *keskel* responses as the centrality decreased (Figure 56; C2 indicates the lower level of centrality). Again, *in the middle of* and *keskel* behave the same way.

Figure 56. Proportion of *keskel* responses as a function of the centrality of trajector



Hypothesis 3. For the adpositions *seas* and *hulgas* a number of things were posited. Since they are considered more or less synonymous, I thought it relevant to include also figures where the responses of these two adpositions are taken together. Under each hypothesis for *seas* and *hulgas*, an additional chart is thus included side by side with the chart where these adpositions are characterised separately. In this way, it is believed that a better comparison can be made with the English preposition *among*, which is given as the translational counterpart for both of these Estonian adpositions. First of all, as expected I found that the participants' choice for *seas* and *hulgas* was influenced by the quantity of landmarks – there was an increase in *seas* and *hulgas* responses as the quantity increased (Figure 57).

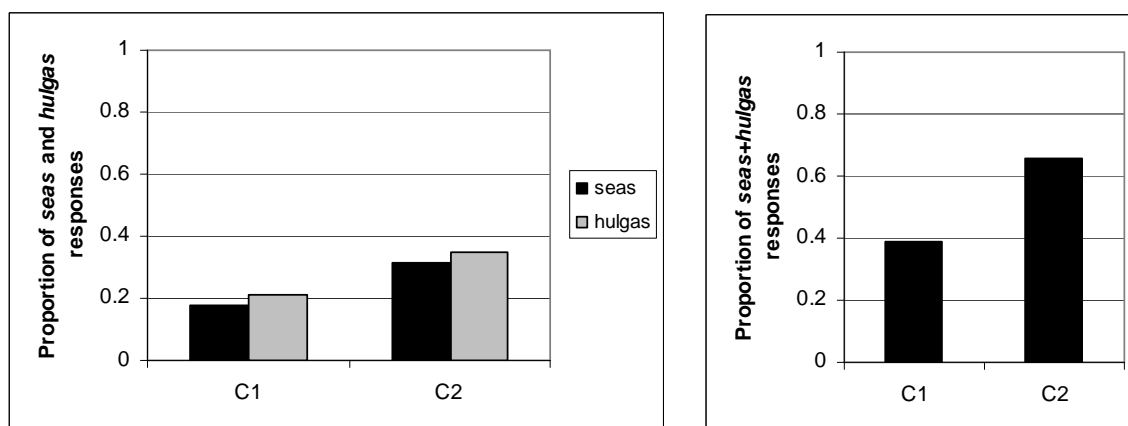
Figure 57. Proportion of *seas* and *hulgas* responses as a function of the quantity of landmarks



It can be seen that the proportion of *seas* and *hulgas* responses at the levels of 3LM and 6LM are considerably higher than at the level 2LM. Nevertheless, as can be seen from the right-hand chart in Figure 57, the trend is not linear. The proportion of *seas* responses at the 3LM level is higher than at the 6LM level; interestingly, there is a more or less same proportion of *hulgas* responses at these levels. Similarly to the results of English *among*, this bell-curve can be explained by going back to Figure 52 above, where it can be seen that the proportion of *keskel* responses for pictures that contained six landmarks is quite high. Thus, when the trajectory was exactly at the centre position with respect to these six landmarks, the participants predominantly chose *keskel*; otherwise *seas* or *hulgas* was selected.

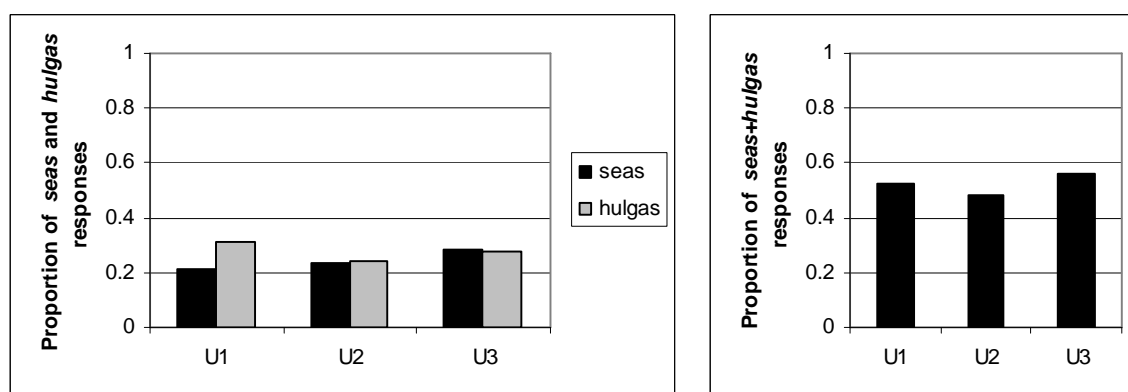
Furthermore, I expected the centrality of the trajector to affect the applicability of *seas* and *hulgas*. As predicted, there is an increase in *seas* and *hulgas* responses as the centrality decreased (Figure 58; C2 indicates the lower level of centrality). This trend is again very similar to the English *among*.

Figure 58. Proportion of *seas* and *hulgas* responses as a function of the centrality of trajector



The third effect hypothesised pertained to the use of *seas* and *hulgas* and the level of uniformity. I anticipated that there will be a decrease in the *seas* and *hulgas* responses when the level of uniformity is decreased; however, there is the same slight opposite effect with *seas* as with *among* (Figure 59).

Figure 59. Proportion of *among* responses as a function of uniformity



3.3 Summary

The aim of this experiment was to verify some of the hypotheses made based on the corpus and semantic analyses of the English and Estonian MEDIAL REGION adpositions.

More specifically, the experiment tested the effect of three attributes (quantity of landmarks, uniformity of landmarks and the trajector, and centrality of the trajector) on the use of the tested adpositions. For both English and Estonian, a set of similar hypotheses was posited, specifying the possible interrelationships of these attributes and adpositions.

Both quantity and centrality were found to influence the use of adpositions in both English and Estonian; for uniformity, no such effects were found. However, it still seems to me that uniformity may also play a role, although it was not confirmed in my experiment. I decided to include this attribute, because my corpus analysis gave a lot of occurrences of *among, seas, hulgas* in such phrases as *among other things, among them, nende seas, nende hulgas*. In addition to the uniformity attribute, the attribute of animacy, not tested in this experiment also merits future research and separate experiments.

The hypotheses that were confirmed in this experiment include the following:

1. **The language user's choice of *between, vahel, among, seas, hulgas* is influenced by the quantity of landmarks.** The proportion of *between* and *vahel* responses decreased and the proportion of *among, seas, hulgas* responses increased as the quantity of landmarks was increased.
2. **The language user's choice of *in the middle of, keskel* and *among, seas, hulgas* is influenced by the centrality of the trajector.** The proportion of *in the middle of* and *keskel* responses decreased and the proportion of *among, seas, hulgas* responses increased as the centrality of the trajector was decreased.

The “funny” partial bell-curve that the proportions of *among, seas, hulgas* responses showed for the attribute quantity (Figures 39 and 57) can be explained by one of the possible weaknesses of this experiment, i.e. that it was a forced-choice task. The participants had to choose among the given prepositions and they had no such option as “none of these adpositions accurately describe the presented scene”. Such problematic pictures could possibly have been those that pertained to the 3LM quantity, i.e. where the trajector was placed in the intermediate position of three landmarks. Such a scene is somewhat contradictory also to the central hypothesis of the thesis – that MEDIAL REGION is an elaboration of CONTAINMENT. However, in pictures of quantity 3LM there was only partial containment, the landmarks surrounded the trajector only partly. Thus, it may be

that for the participants the choice of *among*, *seas*, *hulgas* for quantity 3LM was the lesser of the two evils. A possible future research topic could be an acceptability task with these MEDIAL REGION adpositions when they are used to describe such scenes where CONTAINMENT is only partial.

Another major weakness includes the small number of native speakers for English and the character of stimuli. It included only the autoshape figures of circles, triangles and stars, but it would be interesting to compare these results with a different set of stimuli, i.e. real-life objects.

All in all, the results for the English and Estonian MEDIAL REGION adpositions studied were very similar and the translational counterparts in these two languages can be said to behave more or less the same way, at least with respect to the conditions specified in this experiment. For my personal surprise, the English *between* and Estonian *vahel* showed a similar level of restrictedness as to the quantity of landmarks in the present experiment. It seems as though that the grammaticalization of the English *between* does not make the English *between* more restricted than the Estonian *vahel*.

CONCLUSION

In the present thesis I have analysed the semantics of the following English and Estonian MEDIAL REGION adpositions from the perspective of Cognitive Grammar (Langacker 1987, 1990/2002, 1999, 2008): *between, among, amongst, amid, amidst, in the middle of, in the centre of, vahel, vahele, vahelt, seas, sekka, seast, hulgas, hulka, hulgast, keskel, keskele, keskelt, keset*. The term MEDIAL REGION refers to a spatial scene where one object is located in a middle or intermediate position in relation to another object or objects. Although numerous cross-linguistic studies on adpositions have been carried out within the framework of Cognitive Grammar, not much has been done in relation to these MEDIAL REGION adpositions. Such an endeavour was both challenging and engaging – it gave an opportunity to test whether the theoretical constructs are applicable for the practical analysis of real linguistic data.

Chapter 1 describes the various theoretical concepts that are employed in the analysis of English and Estonian MEDIAL REGION adpositions. First of all, it discussed the notion of word classes in modern linguistics. It was shown that there are numerous problems with defining the categories of adposition in both English and Estonian. In both languages, adpositions, adverbs, and particles share the same form and the borderlines between these word classes are not always clear. It was posited that in such cases, the Cognitive Grammar approach to word classes is more useful than the traditional account, because it allows the adpositions as well as their use as adverbs and particles to be taken as one unitary category. Langacker (2008) has proposed the term *non-processual relationships* as this type of global category, which comprises both adpositions and adverbs.

Chapter 1 also summarises the cognitive semantic (Johnson 1987, Lakoff 1987, Langacker 1987, 2008, Talmy 2000) approach to the study of adpositions. Differently from autonomous approaches, cognitive linguists place special emphasis on meaning. It is claimed that linguistic meaning is embodied and based on conventionalised conceptual structures, such as metaphor and image schemas. The first chapter also described the various construal operations relevant in studying spatial language, e.g. profiling, categorization, figure/ground alignment, perspective, and image schemas; these are all

related to our general cognitive processes. The notion of image schemas (Johnson 1987) was especially useful for the semantic description of English and Estonian MEDIAL REGION adpositions. In examining the specific descriptive models put forward within cognitive semantic analyses, the chapter proposes that Langacker's (1987, 1990/2002, 1999, 2008) network model is most convincing when compared to, for example, Lakoff's (1987) radial networks and Evans and Tyler's (2003) Principled Polysemy approach. Langacker's network model is taken as the basis for the analysis of English and Estonian MEDIAL REGION adpositions.

Chapter 2 provides a semantic description of English and Estonian MEDIAL REGION adpositions. The analysis is based on the results of corpus analysis and the experimental findings. As a result of the semantic analysis, the complex category of MEDIAL REGION is posited for both English and Estonian. Furthermore, based on the semantic findings it was claimed that MEDIAL REGION is an elaboration of CONTAINMENT schema and an extension of INTERIOR REGION category. Three further elaborations were posited for both the English and Estonian MEDIAL REGION category: MEDIAL, MEDIAL-PLURAL and MIDDLE. It was postulated that the MEDIAL-PLURAL elaboration is the prototype within the MEDIAL category. The specific English and Estonian MEDIAL REGION adpositions were analysed under these three sub-groups.

For each sub-group a network was proposed with a central schema and various elaborations. In the present thesis, Langackerian network model proved especially useful, as it enabled to account for a wide variety of adposition uses by postulating one central schema with its specific elaborations. The central schema for English and Estonian MEDIAL adpositions was a scene where the trajector was located in the intermediate position of two landmarks; for MEDIAL-PLURAL adpositions a scene where the trajector was located in the intermediate position of a plural landmark; for MIDDLE adpositions a scene where the trajector was located at the centre region of a singular landmark.

The cross-linguistic comparison showed that the English and Estonian MEDIAL REGION adpositions are used in a remarkably similar way. The central schemas posited for the three sub-groups pertained to all of the adpositions discussed under these groups. Still, there are some interesting differences, e.g. the use of Estonian *vahel* with singular

landmarks. One of the predominant characteristics of both the English and Estonian MEDIAL REGION adpositions is that they can all be used with plural landmarks – in this sense, they seem to be synonymous. However, it was postulated that which particular adposition is used depends on how the speaker construes the scene. It was found that a number of attributes may influence the use of these adpositions with plural landmarks.

Chapter 3 describes the experimental findings related to the hypotheses posited for the following English and Estonian MEDIAL REGION adpositions: *between*, *among*, *amid*, *in the middle of*, *vahel*, *seas*, *hulgas*, *keskel*. The experiment tested the effect of three attributes (quantity of landmarks, uniformity of landmarks and the trajector, and centrality of the trajector) on the use of the tested adpositions. For both English and Estonian, a set of similar hypotheses was posited, specifying the possible interrelationships of these attributes and adpositions. Both quantity and centrality were found to influence the use of adpositions in both English and Estonian; for uniformity, no such effects were found. In total, four hypotheses were posited for both languages; the following two were confirmed:

1. The language user's choice of *between*, *vahel*, *among*, *seas*, *hulgas* is influenced by the quantity of landmarks. The use of *between* and *vahel* was significantly high with two landmarks; *among*, *seas*, *hulgas* were used when there were more than two landmarks.
2. The language user's choice of *in the middle of*, *keskel* and *among*, *seas*, *hulgas* is influenced by the centrality of the trajector. The more centrally the trajector was located with respect to landmarks, the higher was the proportion of *in the middle of* and *keskel* responses. The less centrally the trajector was located, the lower was the proportion of *among*, *seas*, *hulgas* responses.

The expectation that *between* is less frequently used with more than two landmarks than *vahel* did not find support in the experiment. Neither was any special difference detected in the use of Estonian adpositions *seas* and *hulgas*.

The semantic analysis presented in chapter 2 and the experimental findings discussed in chapter 3 indicate a number of problematic issues, which cannot be resolved in a dissertation on the MA level. One of the challenging research topics is the locative and separative form of Estonian adpositions; the question of how these three members – locative, locative and separative – could be presented within a Langackerian network model

awaits answering. It would be interesting to see, whether the categorizing relationships that hold between them are that of elaboration or extension. Another set of questions that merit future research pertains to the apparent synonymous use of the MEDIAL REGION adpositions. It is hoped that larger scale corpus analysis and further experiments might shed some light on this issue.

REFERENCES

Primary Sources

British National Corpus (BNC). Available at <http://www.natcorp.ox.ac.uk/>

Eesti keele koondkorpus. Mixed Corpus of Estonian (MCE). Available at <http://www.cl.ut.ee/korpused/segakorpus/>

Eesti kirjakeele seletussõnaraamat (EKKS). Available at <http://www.keelevara.ee/>

Oxford Dictionary of English (OED). Available at <http://www.oed.com/>

Secondary Sources

Ameka, F. and Levinson, S.C. 2007. The typology and semantics of locative predicates: Posturals, positionals and other beasts. *Linguistics*, 45: 5/6, 847-871.

Barlow, M. and Kemmer, S. 2000. *Usage-Based Models of Language*. Stanford, California: CSLI Publications.

Bennett, D. C. 1975. *Spatial and Temporal Uses of English Prepositions: An Essay in Stratificational Semantics*. London: Longman.

Bloom, P., Peterson, M. A., Nadel, L., and Garrett, M.F. (eds). 1999. *Language and Space*. Cambridge, Massachusetts: The MIT Press.

Boroditsky, L. 2001. Does language shape thought? English and Mandarin speakers' conceptions of time. *Cognitive Psychology*, 43: 1, 1-22.

Bowerman, M. 1996. The origins of children's spatial semantic categories: cognitive versus linguistic determinants. In J. J. Gumperz and S. C. Levinson (eds). *Rethinking Linguistic Relativity*. Cambridge: Cambridge University Press.

Brugmann, C. 1988. *Story of Over: Polysemy, Semantics, and the Structure of the Lexicon*. New York and London: Garland Publishing, Inc.

Bybee, J., Perkins, R., and Pagliuca, W. 1994. *The Evolution of Grammar: Tense, Aspect, and Modality in the Languages of the World*. Chicago: The University of Chicago Press.

Cappelle, B. 2005. *Particle Patterns in English: A Comprehensive Coverage*. Available at <http://www.kuleuven-kortrijk.be/nl/Onderzoek/Letteren/OnderzoekTaalkunde/FEST/DescriptiveEnglishGrammar/bert-cappelle> [Accessed: May 10, 2008]

Carlson, L. and Van der Zee, E. 2005. *Functional Features in Language and Space. Insights from perception, categorization, and development*. Oxford: Oxford University Press.

Chomsky, N. 1957. *Syntactic Structures*. The Hague: Mouton.

Chomsky, N. 1965. *Aspects of the Theory of Syntax*. Cambridge, Mass.: MIT Press.

Clausner, T. C. and Croft, W. 1999. Domains and image schemas. *Cognitive Linguistics*, 10: 1, 1-32.

- Coventry, K. R., and Garrod, S. C. 2004. *Saying, Seeing, and Acting: The Psychological Semantics of Spatial Prepositions*. New York: Psychology Press.
- Coventry, K. R., Carmichael, R., and Garrod, S. C. 1994. Spatial prepositions, object-specific function, and task requirements. *Journal of Semantics*, 11, 289-309.
- Croft, W. 1998. Linguistic evidence and mental representations. *Cognitive Linguistics*, 9, 151–73.
- Croft, W. 2001. *Radical Construction Grammar*. Oxford: Oxford University Press.
- Croft, W. and Cruse, A. 2004. *Cognitive Linguistics*. Cambridge: Cambridge University Press.
- Dryer, M. S. 2005. *The World Atlas of Language Structures Online*. Available at <http://wals.info/index> [Accessed: May 25, 2008].
- Dryer, M. S. 2007. Word order. In T. Shopen (ed). *Language Typology and Syntactic Description*. Vol. I, 2nd ed. Cambridge: Cambridge University Press,
- Erelt, M. et al. 1995. *Eesti keele grammatika I. Morfoloogia. Sõnamoodustus*. Tallinn: Eesti Teaduste Akadeemia Keele ja Kirjanduse Instituut.
- Erelt, M. et al. 1993. *Eesti keele grammatika II. Süntaks. Lisa: Kiri*. Tallinn: Eesti Teaduste Akadeemia Keele ja Kirjanduse Instituut.
- Evans, V. and Green, M. 2006. *Cognitive Linguistics: An Introduction*. Edinburgh: Edinburgh University Press.
- Fauconnier, G. and Sweetser, E. (eds). 1996. *Spaces, Worlds, and Grammar*. Chicago: University of Chicago Press.
- Fauconnier, G. and Turner, M. 2002. *The Way We Think. Conceptual Blending and the Mind's Hidden Complexities*. New York: Basic Books.
- Feist, M. 2000. On In and On: An Investigation into the Linguistic Encoding of Spatial Scenes. Ph.D. Dissertation, Northwestern University, USA. Available at <http://www.ucl.ac.uk/~mif8232/thesis.pdf> [Accessed: May 2007]
- Feist, M. and Gentner, D. 2003. *Factors Involved in the Use of In and On*. Available at <http://www.ucl.ac.uk/~mif8232/feist04.pdf> [Accessed: May 2007]
- Filipovic Kleiner, L. 2004. Book Review. Space in Language and Cognition: Explorations in Cognitive Diversity. *Journal of Pragmatics*, 36, 2089-2099.
- Filipovic Kleiner, L. 2003. Review: the semantics of English prepositions. *Journal of Pragmatics*, 37: 5, 775–779.
- Filipovic Kleiner, L. 2006. Reply to Tyler. *Journal of Pragmatics*, 38: 6, 975-978.
- Fodor, J. 1983. *The Modularity of Mind*. Cambridge, Mass.: MIT Press.
- Geeraerts, D. 1999. Idealist and cognitive tendencies in cognitive linguistics. In T. Janssen and G. Redeker (eds). *Cognitive Linguistics: Foundations, Scope, and Methodology*, 163–194. Berlin: Mouton de Gruyter.

- Goldberg, A. E. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: The University of Chicago Press.
- Goldberg, A. E. 2006. *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.
- Gonzalez-Marquez, M., Mittelberg, I., Coulson, S. and Spivey, M. J. (eds). 2007. *Methods in Cognitive Linguistics*. Amsterdam: John Benjamins.
- Grünthal, R. 2003. *Finnic Adpositions and Cases in Change*. Helsinki: The Finno-Ugrian Society.
- Habicht, K. 2000. Grammaticalization of adpositions in Old Literary Estonian. In M. Erelt (ed). *Estonian: Typological Studies IV*, 19-58. Tartu: Publications of the Department of Estonian of the University of Tartu 14.
- Habicht, K. 2001a. *Eesti vanema kirjakeele leksikaalsest ja morfosüntaktilisest arengust ning Heinrich Stahli keele eripärast selle taustal*. Ph.D. Dissertation. Tartu: Tartu Ülikooli Kirjastus.
- Habicht, K. 2001b. On the genesis and loss of the adposition *rinnas* ('abreast, beside') in Literary Estonian. In I. Tragel (ed). *Papers in Estonian Cognitive Linguistics*, 71-89. Publications of the Department of General Linguistics 2. Tartu: Tartu Ülikooli Kirjastus.
- Habicht, K., Kaalep, H.-J., Muischnek, K., Müürisep, K. and Rääbis, A. 2000. Kas tegelik tekst allub eesti keele morfoloogilistele kirjeldustele? Eesti kirjakeele testkorpuse morfosüntaktilise märgendamise kogemusest. *Keel ja Kirjandus*, 9, 623 - 633.
- Hampe, B. (ed). 2006. *From Perception to Meaning: Image Schemas in Cognitive Linguistics*. Berlin: Mouton de Gruyter
- Haspelmath, M. 2003. The Geometry of Grammatical Meaning: Semantic Maps and Cross-Linguistic Comparison. In M. Tomassello (ed). *The New Psychology of Language*, Vol. 2., 211–242. Mahwah, NJ: Erlbaum.
- Heine, B. and Kuteva, T. 2002. *World Lexicon of Grammaticalization*. Cambridge: Cambridge University Press.
- Heine, B., Claudi, U. and Hünnemeyer, F. 1991. *Grammaticalization: A Conceptual Framework*. Chicago: University of Chicago Press.
- Herskovits, A. 1986. *Language and Spatial Cognition: An Interdisciplinary Study of the Prepositions in English*. Cambridge: Cambridge University Press.
- Hickmann, M. and Robert, S. (eds). 2006. *Space in Languages: Linguistic Systems and Cognitive Categories*. Amsterdam: John Benjamins Publishing Company.
- Hopper, P. J. and Traugott, E. C. 2003. *Grammaticalization*. 2nd ed. Cambridge: Cambridge University Press.
- Huddleston, R. and Pullum, G. K. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.

- Huumo, T. (to appear). Joki lingvistin nojatuoli joutaisi kaatopaikalle? Introspektioliingvistiikan asemasta kognitiivisessa kielitieteessä. *Emakeele Seltsi Aastaraamat*. Tallinn: Emakeele Selts.
- Huumo, T. 2004. Aspectual object marking with verbs of perception and cognition: A Finnish–Estonian study. In E. González-Álvarez and A. Rollings (eds). *Studies in Contrastive Linguistics 2. Proceedings of the 3rd International Contrastive Linguistics Conference, Santiago de Compostela, September, 2003*, 223–228. *Cursos e congresos da Universidade de Santiago de Compostela* 150. Spain: Santiago de Compostela.
- Häkkinen, K. 2004. *Nykysuomen etymologinen sanakirja*. Juva: WSOY.
- Johnson, M. 1987. *The Body in the Mind*. Chicago: The University of Chicago Press.
- Karelsen, R. 1972. Märkmeid kaassõna piirimailt. *Emakeele Seltsi Aastaraamat*, 18, 71-84.
- Kemmer, S. and Barlow, M. 2000. Introduction: a usage-based conception of language. In M. Barlow and S. Kemmer (eds). *Usage Based Models of Language*, vii-xxviii. Stanford, California: CSLI Publications.
- Krikmann, A. 2002. Kas elu on konteiner?. In R. Pajusalu and T. Hennoste (eds). *Tähendusepüüdja. Pühendusteos professor Haldur Õimu 60. sünnipäevaks*, 231-253. Tartu: Tartu Ülikooli Kirjastus.
- Krikmann, A. 2003. Kaasaegse metafooriteooria panus parömioloogiasse. *Uurimusi folkloori lühivormidest*, 52-143. Tartu: EKM, EKFK.
- Kährik, K. 2002. The meaning of *alla*, *maha* and *down* in spatial and metaphorical particle-verb constructions. Unpublished MA thesis. University of Tartu, Department of Germanic and Romance languages and literatures, Tartu.
- Lakoff, G. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: The University of Chicago Press.
- Lakoff, G. and Johnson, M. 1980. *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lakoff, G. and Johnson, M. 1999. *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.
- Lakoff, M. and Turner, M. 1989. *More than Cool Reasons: A Field Guide to Poetic Metaphor*. Chicago: University of Chicago Press.
- Landau, B. and Jackendoff, R. 1993. “What” and “where” in spatial language and spatial cognition. *Behavioural and Brain Sciences*, 16, 217-265.
- Langacker, R. W. 1987. *Foundations of Cognitive Grammar. Volume I: Theoretical Prerequisites*. Stanford: Stanford University Press.
- Langacker, R. W. 1990/2002. *Concept, Image, and Symbol*. Berlin: Mouton de Gruyter.
- Langacker, R. W. 1999. *Grammar and Conceptualization*. Berlin: Mouton de Gruyter.
- Langacker, R. W. 2008. *Cognitive Grammar. A Basic Introduction*. Oxford: Oxford University Press.

- Lee, D. 2001. *Cognitive Linguistics. An Introduction*. Oxford: Oxford University Press.
- Lehmann, C. 2002. *Thoughts on Grammaticalization*. 2nd ed. Available at <http://www.uni-erfurt.de/sprachwissenschaft/ASSidUE/ASSidUE09.pdf> [Accessed: May 5, 2008]
- Levinson, S. 2003. *Space in Language and Cognition: Explorations in Cognitive Diversity*. Cambridge: Cambridge University Press
- Li, P. & Gleitman, L. 2002. Turning the Tables: Language and Spatial Reasoning. *Cognition*, 83, 265–294.
- Lindstromberg, S. 1998. *English Prepositions Explained*. Amsterdam: John Benjamins Publishing Company.
- Metslang, H. 2001. On the developments of the Estonian aspect: The verbal particle *ära*. In Ö. Dahl and M. Koptjevskaja-Tamm (eds). *The Circum-Baltic Languages. Typology and Contact. Vol. 2.*, 443–479. Benjamins: Amsterdam/Philadelphia.
- Miller, G. A. and Johnson-Laird, P. N. 1976. *Language and Perception*. Cambridge, MA: Harvard University Press.
- Navarro-Ferrando, I. 1998. *A Cognitive Semantics Analysis of the Lexical Units At, On, and In in English*. Ph.D. Dissertation, Universitat Jaume I. Available at http://www.tdx.cesca.es/TESIS_UJI/AVAILABLE/TDX-0804103-133233//navarro.pdf [Accessed: April 10, 200]
- O'Dowd, E. M. 1998. *Prepositions and Particles in English. A Discourse-Functional Account*. Oxford: Oxford University Press.
- Ojutkangas, K. 2001. *Ruumiinosannimien kieliopillistuminen suomessa ja virossa*. Helsinki: Suomalaisen Kirjallisuuden Seura.
- Õim, H. and Tragel, I. 2007. Teoreetilise keeleteaduse arengust mujal ja meil XXI sajandi algul. *Keel ja Kirjandus*, 2, 98-115.
- Palmeos, P. 1973. *Eesti keele grammatika II. Neljas vihik. Kaassõna*. Tartu: Tartu Riiklik Ülikool.
- Pedersen, E., Danziger, E., Wilkins, D., Levinson, S., Kita, S. and Senft, G. 1998. Semantic typology and spatial conceptualization. *Language* 74: 3, 557- 589.
- Pütz, M. & Dirven, R. 1996. *The Construal of Space in Language and Thought*. Berlin: de Gruyter.
- Quirk, R., Greenbaum, S., Leech, G., and Svartvik, J. 1985. *A Comprehensive Grammar of the English Language*. London and New York: Longman.
- Raun, A. 1982. *Eesti keele etümoloogiline teatmik*. Rooma, Toronto: Maarjamaa.
- Regier, T. 1996. *The Human Semantic Potential*. Cambridge, Massachusetts: MIT Press.
- Rosch, E. 1973. Natural categories. *Cognitive Psychology*, 4: 3, 328–350.
- Rosch, E. and Mervis, C. B. 1975. Family resemblances: studies in the internal structure of categories. *Cognitive Psychology*, 7, 573–605.

- Rosch, E., Mervis, C. B., Gray, W., Johnson, D. and Boyes-Braem, P. 1976. Basic objects in natural categories. *Cognitive Psychology*, 8, 382–439.
- Saeed, J. 2003. *Semantics*. 2nd ed. Oxford: Blackwell.
- Sandra, D. 1998. What linguists can and can't tell you about the human mind: a reply to Croft. *Cognitive Linguistics*, 9: 4, 361-478.
- Sandra, D. and Rice, S. 1995. Network analyses of prepositional meaning: mirroring whose mind – the linguist's or the language user's? *Cognitive Linguistics*, 6: 1, 89-130.
- Schachter, P. and Shopen, T. 2007. Parts-of-speech systems. In T. Shopen (ed). *Language Typology and Syntactic Description*. Vol. I, 2nd ed. Cambridge: Cambridge University Press.
- Sinha, C. 1995a. Introduction. *Cognitive Linguistics*, 6: 1, 7-9.
- Sinha, C. 1995b. Introduction. *Cognitive Linguistics*, 6: 2-3, 137-138.
- Sinha, C. and Kuteva, T. 1995. Distributed Spatial Semantics. *Nordic Journal of Linguistics*, 18, 167-199.
- Sweetser, E. 1990. *From Etymology to Pragmatics: Metaphoric and cultural aspects of semantic structure*. Cambridge: Cambridge University Press.
- Svorou, S. 1994. *The Grammar of Space*. Amsterdam: John Benjamins.
- Svorou, S. 2007. Relational constructions in cognitive linguistics. In D. Geeraerts and H. Cuyckens (eds). *Oxford Handbook of Cognitive Linguistics*, 726-752. Oxford: Oxford University Press.
- Talmy, L. 1983. How language structures space. In H. L. Pick and L. P. Acredolo (eds). *Spatial Orientation: Theory, Research and Application*, 225–82. New York: Plenum Press.
- Talmy, L. 1988. Force Dynamics in Language and Cognition. *Cognitive Science*, 12, 49-100.
- Talmy, L. 2000. *Toward a Cognitive Semantics. Volume I: Concept Structuring Systems*. Cambridge, Massachusetts: MIT Press.
- Talmy, L. 2007. Foreword. In M. Gonzalez-Marquez, I. Mittelberg, S. Coulson, and M. J. Spivey (eds). *Methods in Cognitive Linguistics*, xi-xxi. Amsterdam: John Benjamins Publishing Company.
- Tauli, V. 1966. *Structural Tendencies in Uralic Languages*. London: Mouton & Co.
- Taylor, J. R. 2002. *Cognitive Grammar*. Oxford: Oxford University Press.
- Tragel, I. (ed). 2001a. *Papers in Estonian Cognitive Linguistics*. Tartu: Tartu University Press.
- Tragel, I. 2002. Kognitiivne lingvistika mujal ja veel. In R. Pajusalu, I. Tragel, T. Hennoste and H. Õim (ed). *Teoreetiline keeleteadus Eestis*, 272–286. Tartu Ülikooli üldkeeleteaduse õppetooli toimetised 4. Tartu: Tartu Ülikooli Kirjastus.
- Tragel, I. 2003. *Eesti keele tuumverbid*. Ph.D. Dissertation. Tartu: Tartu Ülikooli Kirjastus.

- Tuggy, D. 1998. Linguistic evidence for polysemy in the mind: a response to William Croft and Dominiek Sandra. *Cognitive Linguistics*, 10, 4, 343-368.
- Tyler, A. 2005. Response to Filipovic Kleiner's (2005) review of Tyler & Evans (2003) *The Semantics of English Prepositions*. *Journal of Pragmatics*, 38: 6, 971-974.
- Tyler, A. and Evans, V. 2003. *The Semantics of English Prepositions. Spatial Scenes, Embodied Meaning and Cognition*. Cambridge: CUP.
- Vainik, E. 1995. *Eesti keele väliskohakäänete semantika kognitiivse grammatika vaatenurgast*. Tallinn: Eesti Teaduste Akadeemia Eesti Keele Instituut.
- Vandeloise, C. 1991. *Spatial Prepositions: A Case Study from French*. Chicago: University of Chicago Press.
- Veismann, A. 2001. On the conceptualization of time in Estonian. In I. Tragel (ed). *Papers in Estonian Cognitive Linguistics*, 22 - 47. Tartu: Tartu Ülikooli Kirjastus.
- Veismann, A. 2004. Sõna üle tähendustest. *Keel ja Kirjandus*, 10, 762 - 777.
- Veismann, A. 2006. Peale ja pärast. *Emakeele Seltsi aastaraamat*, 170–183. Tallinn: Emakeele Selts.
- Veismann, A. 2008. Kaassõnade tähenduste kirjeldamisest. *Keel ja Kirjandus*, 5, 335–352.
- Veksi, A. 1982. *Eesti keele grammatika. II. 3. vihik. Määrsõna*. Tartu: TRÜ
- Whaley, L. J. 1997. *Introduction to Typology*. California: Sage Publications.
- Wiedemann, F. J. 1973. *Estnisch-deutsches Wörterbuch*. Vierter unveränderter Druck nach der von Jakob Hurt redigierten Auflage. Tallinn: Valgus.
- Villup, A. 1969. *Adverb eesti keeles*. Tallinn: E. Vilde nim. Tallinna Pedagoogiline Instituut. Eesti keele ja kirjanduse kateeder.
- Zelinsky-Wibbelt, C. (ed). 1993. *The Semantics of Prepositions: From Mental Processing to Natural Language Processing*. Berlin: Mouton de Gruyter.
- Zlatev, J. 2007. Spatial Semantics. In H. Cuyckens and D. Geeraerts (eds). *Handbook of Cognitive Linguistics*. Oxford: Oxford University Press.

Appendix 1. English and Estonian MEDIAL REGION Adpositions in the Corpus Sample

Table 1. Total number of instances in the corpus sample according to the three uses

Adposition	Meaning Domain			Total number of instances
	Spatial	Abstract	Temporal	
between	485	503	214	1202
among	54	357	0	411
amongst	19	80	0	99
amid	46	159	0	205
amidst	23	27	0	50
in the middle of	93	43	64	200
in the centre of	134	7	0	141
vahel	213	687	47	947
vahele	21	27	4	52
vahelt	45	4	0	49
seas	45	159	0	204
sekka	24	32	0	56
seast	27	33	0	60
hulgas	26	197	0	223
hulka	7	49	0	56
hulgast	21	39	0	60
keskel	38	5	58	101
keskele	44	5	1	50
keskelt	48	3	10	61
keset	139	35	27	201

Table 2. Total number of instances in the corpus sample according to the quantity of landmark

Adposition	Singular	Plural	Dual	Not applicable	Total number of instances
between	3	279	908	12	1202
among	19	372	0	21	412
amongst	5	88	0	6	99
amid	103	102	0	0	205
amidst	29	21	0	0	50
in the middle of	194	6	0	0	200
in the centre of	135	6	0	0	141
vahel	22	249	408	268	947
vahele	3	7	18	23	51
vahelt	13	31	2	3	49
seas	17	185	0	2	204
sekka	12	37	0	7	56
seast	10	50	0	0	60
hulgas	15	179	0	29	223
hulka	16	40	0	0	56
hulgast	12	48	0	0	60
keskel	79	21	0	1	101
keskele	25	11	0	14	50
keskelt	24	21	0	16	61
keset	182	19	0	0	201

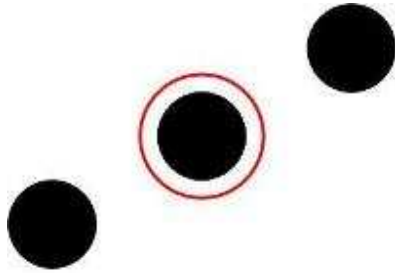
Table 3. Total number of instances in the corpus sample according to the animacy of landmark

Adposition	Animate	Non-animate	Not applicable	Total number of instances
between	273	882	47	1202
among	290	101	21	412
amongst	61	32	6	99
amid	7	198	0	205
amidst	3	47	0	50
in the middle of	1	199	0	200
in the centre of	0	141	0	141
vahel	295	380	272	947
vahele	5	24	23	52
vahelt	11	35	3	49
seas	169	30	5	204
sekka	35	14	7	56
seast	52	8	0	60
hulgas	149	45	29	223
hulka	28	28	0	56
hulgast	44	16	0	60
keskel	8	92	1	101
keskele	6	30	14	50
keskelt	11	34	16	61
keset	3	198	0	201

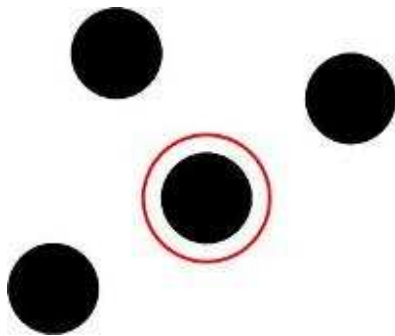
Appendix 2. Experiment: Levels of Variables

1. Three levels of quantity:

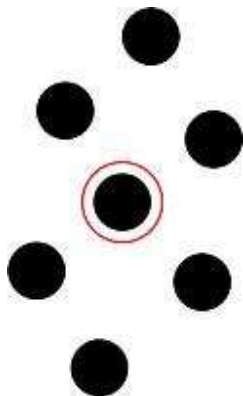
Level 1: two landmarks



Level 2: three landmarks:

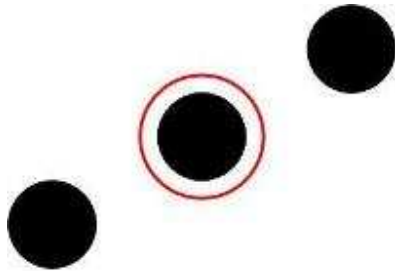


Level 3: six landmarks:

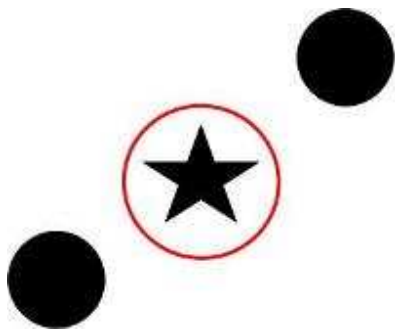


2. Three levels of uniformity:

Level 1: U1 – the trajectory and the landmarks are identical



Level 2: U2 – the landmarks are identical, but the trajectory is different

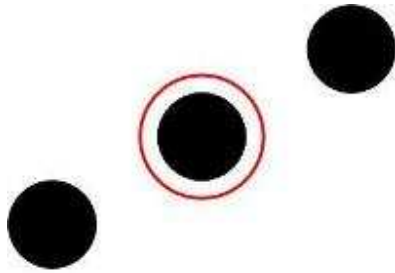


Level 3: U3 – two different types of landmarks and a different trajectory

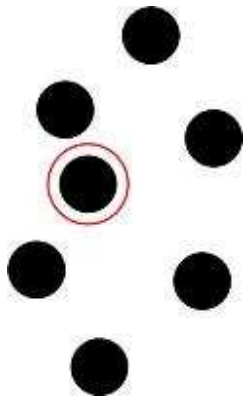


3. Two levels of uniformity:

Level 1: C1 – the trajectory is exactly at the centre of landmarks



Level 2: C2 – the trajectory is not exactly at the centre of landmarks



Resümee

Tartu Ülikool

Inglise filoloogia õppetool

Jane Klavan

Mediaalpiirkonda väljendavad adpositsioonid inglise ja eesti keeles kognitiivse grammatika vaatepunktist.

Magistritöö

2008

lk. 155

Käesolevas magistritöös uurin järgmiste inglise ja eesti keele mediaalpiirkonna adpositsioonide tähendusi: *between, among, amongst, amid, amidst, in the middle of, in the centre of; vahel, vahele, vahelt, seas, sekka, seast, hulgas, hulka, hulgast, keskel, keskele, keskelt, keset*. Töö teoreetiliseks raamistikuks on kognitiivne grammatika (Langacker 1987, 1990/2000, 1999, 2008). Termin *mediaalpiirkond* viitab sellisele ruumilisele suhtele, kus üks objekt asub teis(t)e objekti(de) keskel või vahel. Antud kaassõnad valisin semantilistel kaalutlustel – tingimuseks oli, et keeleüksus väljendab mediaalset ruumisuhet. Kuigi adpositsioone eri keeltes on uuritud palju, k.a. kognitiivse grammatika vaatepunktist, siis enamikel juhtudel on peaarõhk olnud sellistel kaassõnadel, mis väljendavad vaid kahe objekti omavahelist ruumilist suhet. Antud töös otsustasin uurida aga selliste kaassõnade semantikat, mis väljendavad rohkem kui kahe objekti omavahelist suhet. Seega oli minu valim mh hea kognitiivse grammatika töökindluse test. Igapäeva elus puutume me tihti kokku selliste olukordadega, kus kirjeldatavat objekti tuleb identifitseerida mitme teise objekti suhtes. Inimene on „sotsiaalne loom“ ja just neid kaassõnu kasutatakse nii inimeste omavaheliste suhete kui neid ümbritseva maailma kirjeldamiseks.

Magistritöös on sissejuhatus, kolm sisulist peatükki ja kokkuvõte.

Sissejuhatuses tutvustan töö üldist teoreetilist tausta – kognitiivset lingvistikat ja selle põhiteese.

Esimeses peatükis tutvustan olulisi mõisted, mida hiljem kasutan uurimuse analüüsis. Tähelepanu all on muuhulgas sõnaklasside käsitus. Osutan inglise ja eesti keele

adpositsioonide defineerimise probleemidele. Nii eesti kui ka inglise keeles moodustavad adpositsioonid, adverbid ja afiksaaladverbid sama vormilise kujuga sõnade kogumi, kus üleminekualad ühest sõnaklassist teise pole päris selged. Analüüsi tulemusel selgus, et kognitiivse grammatika sõnaklassikäsitlus on sellistel juhtumitel otstarbekam kui traditsiooniline lähenemine, kuna võimaldab ühtse kategooriana käsitleda nii adpositsioone kui ka nende kasutust iseseisva adverbi ja afiksaaladverbina. Langacker (2008) on välja pakkunud termini 'mitteprotsessuaalsed suhted' (*non-processual relationships*), mis hõlmab nii adpositsioone kui ka adverbe. Esimeses peatükis annan ülevaate ka kognitiivse semantika kaassõnauurimustest. Erinevalt formaalsetest lähenemistest pannakse kognitiivses keeleteaduses eriline rõhk kaassõna tähendusele. Esimeses peatükis tutvustan ka ruumisuhete väljendamisega tihedalt seotud konstrueerimissuhte operatsioone (*construal operations*), nt. eendamine, kategoriseerimine, figuuri-fooni jaotus, perspektiiv, kujundskemid. Mediaalpiirkonna adpositsioonide semantika kirjeldamisel osutus kõige kasulikumaks kujundskemide mõiste (Johnson 1987). Kognitiivse semantika eri kirjeldusmudelite võrdlemisel selgus, et Langackeri (1987, 1990/2000, 1999, 2008) võrgustiku mudel on kaassõnade kirjeldamiseks sobivam kui näiteks Lakoffi (1987) radiaalse võrgustiku mudel või Evansi ja Tyleri (2003) *Principled Polysemy* käsitlus. Niisiis kasutasin kaassõnade semantika kirjeldamisel Langackeri mudelit.

Teises peatükis esitan mediaalpiirkonda väljendavate inglise ja eesti keele adpositsioonide semantilise analüüsi. Analüüsi osas on arvesse võetud nii korpusanalüüsi kui katsete tulemusi. Nende tulemuste põhjal esitan MEDIAALPIIRKONNA kompleksse kategooria mudeli. Semantilise analüüsi tulemuseks on, et MEDIAALPIIRKOND on SISALDUMIS-skeemi viimistlus ja SISERUUMIPIIRKONNA laiendus. Lisaks hõlmab see kategooria nii inglise kui ka eesti keeles kolme viimistlust: MEDIAAL, MEDIAAL-PLURAAL ja KESK. Inglise ja eesti keele mediaalpiirkonna adpositsioonide semantika kirjelduses lähtusin sellest kolmikjaotusest. Iga grupi puhul esitasin kõiki selle grupi adpositsioonide kasutusi kirjeldava keskse skeemi ning selle viimistlused. MEDIAAL-adpositsioonide keskseks skeemiks oli selline trajektoori ja orientiiri suhe, kus trajektoor asus kahe orientiiri vahel; MEDIAAL-PLURAAL adpositsioonide puhul asus trajektoor mitme orientiiri vahelisel alal; KESK-adpositsioonide puhul asus trajektoor orientiiri keskkohas.

Kahe keele võrdlus näitas, et inglise ja eesti keele mediaalpiirkonna adpositsioonide tähendused on märkimisväärselt sarnased. Kõigis kolmes grupis oli võimalik välja tuua üks skeem, mis kirjeldas nii inglise kui ka eesti keele sellesse gruppi kuuluvate kaassõnade kasutust. Esines siiski ka erinevusi – nt. on eesti keele üheks idiosünkraatiliseks omaduseks see, et kaassõna *vahel* kasutatakse grammatiliselt ainsusliku orientiiriga. Üheks kõige silmapaistvamaks omaduseks mõlema keele mediaalpiirkonna kaassõnade puhul oli see, et neid kõiki sai kasutada mitmusliku orientiiriga – see osutab ilmselt vastavate kaassõnade sünonüümiale. Materjali analüüsi põhjal selgus, et kaassõna valik oleneb sellest, kuidas keelekasutaja kirjeldatavat olukorda tajub ja vastavalt sellele keeleliselt konstrueerib. Lisaks selgus, et nende kaassõnade kasutust mõjutavad lisategurid

Kolmandas peatükis kirjeldatakse kaassõnade tähenduste uurimiseks koostatud katse tulemusi. Katse testis kolme tunnuse mõju inglise ja eesti mediaalpiirkonna adpositsioonide *between, among, amid, in the middle of, vahel, seas, hulgas, keskel* kasutusele. Testitavad

tunnused olid orientiiride arv, orientiiride ja trajektoori ühetaolisus ning trajektoori tsentraalsus. Testi tulemusel selgus, et nii orientiiride arv kui ka trajektoori tsentraalsus mõjutavad kaassõna valikut ja kasutust; kolmanda tunnuse – ühetaolisuse – mõju katses ei avaldunud. Mõlema keele kohta püstitasin neli hüpoteesi, millest kinnitust leidsid kaks:

1. Adpositsioonide *between, vahel, among, seas, hulgas* valikut mõjutab orientiiride arv. *Between* ja *vahel* kasutus oli märkimisväärselt kõrge kahe orientiiri puhul; *among, seas, hulgas* kasutati siis, kui oli tegemist rohkem kui kahe orientiiriga.
2. Adpositsioonide *in the middle of, keskel, among, seas, hulgas* valikut mõjutab trajektoori tsentraalsus. Mida rohkem keskel trajektoori orientiiri suhtes asub, seda rohkem kasutatakse *in the middle of, keskel*; mida vähem keskel trajektoori asub, seda rohkem kasutatakse *among, seas, hulgas*.

Eeldus, mille alusel adpositsiooni *between* kasutatakse mitmusliku orientiiriga vähem kui adpositsiooni *vahel* ei leidnud läbiviidud katses kinnitust. Samuti ei ilmnunud katse tulemusel erilisi tähenduserinevusi kaassõnade *seas* ja *hulgas* kasutustes.

Inglise ja eesti mediaalpiirkonna adpositsioonide korpuspõhine tähendusanalüüs ja korraldatud katse tulemused jätavad õhku mitu huvitavat uurimistemat, mida magistritasme väitekirja maht ei võimalda lahendada: üheks väljakutsuvaks teemaks on eesti keele adpositsioonide latiivne ja separatiivne vorm; vastust ootab ka küsimus, kuidas võiksid need kolm liiget – lokatiivne, latiivne ja separatiivne – olla esitatud langackeriaanlikus võrgustiku mudelis. Oleks huvitav uurida, kas nende vormide omavaheline suhe on pigem viimistlus- või laiendussuhe. Teise tulevikus lahendust ootavate küsimuste grupi moodustab nii inglise kui ka eesti keele mediaalpiirkonna kaassõnade esmapilgul sünonüümsena tunduv kasutus. Korpusanalüüs ja selle tulemuste põhjal koostatud katsed annavad edaspidi loodetavasti sellele tundmusele uurimustulemusliku väärtusega vastuse.