THE DIVISION OF LABOUR BETWEEN SYNONYMOUS LOCATIVE CASES AND ADPOSITIONS: THE ESTONIAN ADESSIVE AND THE ADPOSITION PEAL ‘ON’

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1. Introduction

It is often claimed that there is no (absolute) synonymy in languages. Synonymy is regarded as an excessive luxury and yet, there are numerous examples in every language of synonymous lexical items and grammatical constructions. Estonian is no exception and in this Finno-Ugric language we have, among other synonymous items, several ways of expressing spatial relations – we can use locative cases (example 1a) or adpositional constructions (example 1b).

(1) a. vaas on laual
    vase:NOM be-PRS:SG3 table:ADE
    ‘the vase is on the table’

b. vaas on laua peal
    vase:NOM be-PRS:SG3 table:GEN on
    ‘the vase is on the table’

The aim of the present article is to determine whether the Estonian locative constructions with the adessive case (example 1a) and the adposition peal (example 1b), both meaning ‘the vase is on the table’, are synonymous or not and what does the choice of one of these constructions depend on. We are interested in the difference between using synthetic and analytic ways of expressing one and the same function. More specifically, we will be taking a closer look at one of the central claims made in literature about the difference between the ways the two strategies are used. Namely that case affixes are used to express more abstract relations and adpositions more concrete ones (e.g. Bartens 1978, Comrie 1986, Hagège 2010: 37-38, Lestrade 2010b, Luraghi 1991: 66-67, Ojutkangas 2008). Adpositions are said to be semantically more specific than cases and they are used to express the less predictable spatial meanings; cases, on the other hand, are more abstract and used to express more frequent spatial meanings (Lestrade 2010b). The aim of this article is to present the results of two linguistic studies that provide additional support to these claims. The article thus hopes to contribute to the general discussion of the division of labour between synonymous adpositions and case affixes.

The language data analysed in this article comes from two linguistic experiments – a production task and a forced choice task. The paper proceeds from the theoretical premises of both Construction Grammar (Goldberg 1995, 2006) and Cognitive Grammar (Langacker 1987, 2008), where one of the basic general assumptions is that of no-synonymy – when two constructions differ syntactically, then they also differ either semantically or pragmatically (Goldberg 1995: 67). Taking into consideration both the claims made in Cognitive Linguistics and the previous work done on the differences between cases and adpositions (Bartens 1978, Comrie 1986, Hagège 2010, Lestrade 2010b, Luraghi 1991, Ojutkangas 2008), it was hypothesised that although the Estonian locative cases and adpositional constructions appear, at first sight, to be synonymous and are treated as such in
traditional grammars of Estonian (Erelt et al. 1995: 34), there are differences in how language
speakers actually use these constructions.

Although we agree with Hagège (2010: 37) that case affixes and adpositions serving the same
function show typologically various phonological, morphological, word order, syntactic, semantic-
pragmatic and historical differences, we will be concentrating in this article only on some of the
semantic differences between these two constructions. The work on other types of differences
between Estonian locative cases and adpositional constructions remain tasks for future research.
However, see Hagège (2010: 9-37) for a general typological overview on the relationship between
adpositions and case affixes and Grünthal (2003) for an overview of adpositions and cases in Finnic.

The goal of this paper is to consider in detail the semantic factors that play a role in the parallel use
of the Estonian adessive and the adposition peal. In order to test the influence of the semantic
factors, we designed two linguistic tests. In designing the tests we relied on the previous vast
cognitive-functional literature on spatial expressions, e.g. Carlson and Van der Zee 2005, Coventry
article, we will demonstrate how the type of relation between the Trajector and the Landmark, the
type of Landmark and the type of contact between the Trajector and the Landmark influence the
choice between the Estonian adessive case and the adposition peal, confirming thus the general
claim about cases being more abstract and adpositions more specific in their meaning. We will reach
the same conclusion as Hagège (2010: 37) that it is not quite true that everything one can do with
adpositions, one can do with case markers and vice versa.

Before moving on to the analysis of our data and the discussion of our results, we feel it necessary to
explain some of the key terms related to our study: relational construction, Trajector and Landmark.
Spatial expressions constitute what are termed as relational constructions which, on the semantic
level, consist of the following: Trajector, Landmark and relational gram (Svorou 2007: 728–729). The
terms Trajector and Landmark were proposed by Langacker (1987) and are equivalent to Talmy’s
(1975) Figure and Ground; for limitations of space we will use in this article the abbreviations ‘Tr’
and ‘Lm’ for these entities respectively. Trajector (Tr) is the entity whose location or motion is of
relevance and Landmark (Lm) is the reference entity in relation to which the location or the motion
of the trajecor is specified; Trajector may be static or dynamic, a person or an object, or even a
whole event (Zlatev 2007: 327). The relational gram specifies a relation that exists between the
Trajector and the Landmark. Different languages have different relational grams – for example,
cases, adpositions, and locative verbs (Levinson, Wilkins 2006: 5; Svorou 2007: 728–729). In Estonian
both the locative cases and locative adpositions may be used to specify a spatial relation between a
Trajector and a Landmark, making Estonian thus an excellent source for studying variation among
relational grams serving the same function.

The article consists of an introduction and four main sections. The first section gives an overview of
the functions of the Estonian adessive case and the adposition peal, the second section describes the
experimental design and the predictions posited, the third section gives an overview of the method
we used; we present and discuss our results in the fourth section. The article ends with a conclusion.

2. On Estonian locative cases and adpositions with special focus on the adessive and the
adposition peal ‘on’
2.1. The Estonian Adessive Case

Estonian nouns and adjectives decline in fourteen cases; six of these cases are referred to as locative cases and they can be divided into interior locative cases (illative, inessive, elative) and external locative cases (allative, adessive, ablative) (Table 1).

<table>
<thead>
<tr>
<th>Interior</th>
<th>LATIVE (direction)</th>
<th>LOCATIVE (location)</th>
<th>SEPARATIVE (source)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>illative</td>
<td>inessive</td>
<td>elative</td>
</tr>
<tr>
<td></td>
<td>laua-sse ‘into table’</td>
<td>laua-s ‘in table’</td>
<td>laua-st ‘out of table’</td>
</tr>
<tr>
<td>Exterior</td>
<td>allative</td>
<td>adessive</td>
<td>ablative</td>
</tr>
<tr>
<td></td>
<td>laua-le ‘onto table’</td>
<td>laua-l ‘on table’</td>
<td>laua-lt ‘off table’</td>
</tr>
</tbody>
</table>

The Estonian adessive case belongs to the set of Estonian external locative cases and expresses, first and foremost, spatial or temporal relations and normally takes the role of an adverbial or attribute in the clause (Erelt et al. 1995: 58). Estonian external locative cases express spatial relations of an open surface and they form three-part series – allative, adessive, ablative – expressing direction, location and source respectively (Erelt, Erelt, Ross 2007: 240; see Table 1). The present article focuses only on the adessive, although the other forms of external locative cases are also synonymous with the respective forms of the adposition peal (direction: allative -le ~ peale ‘onto’; source: ablative -lt ~ pealt ‘off’). The function of the Estonian adessive case is to express the following (Erelt, Erelt, Ross 2007: 250):

(2)  
a. location, e.g. *Mari elab juba kolmandat aastat välismaal.* ‘Mari lives abroad third year in a row.’
b. temporal relations, e.g. *Nad sõidavad neljapäeval maale.* ‘They are driving to the country on Thursday.’
c. state, e.g. *Naerul näoga vaatas Jüri meie poole.* ‘Jüri looked at us with a smiling face.’
d. possessor or other logical subject with finite verb forms, e.g. *Maril on kaks last.* ‘Mari has two kids.’ *See asi ununes mul täälikult.* ‘I completely forgot about that thing.’
e. logical subject in infinitive constructions, e.g. *Luba tal ükskord ometi kõik südamelt ära rääkida.* ‘For once, let him tell you everything that is on his heart.’
f. instrument, e.g. *Mari mängib klaveril juba päris keerulisi lugusid.* ‘Mari already plays quite complicated tunes on the piano.’
g. manner, nt *Mari kuulas kikkis kõrvul.* ‘Mari listened with her ears pricked up.’

Although the primary meaning of the locative cases has been the expression of spatial relations, in modern Estonian the locative cases fulfil a number of abstract functions. Thus, for example, it is more frequent for the Estonian adessive to mark the possessor or the logical subject (see function 2d above) than, for example, location, but for the present study only the adessive function of expressing location is relevant. According to the so-called 'localist' theory the concrete uses of a case are more primary than the more ‘abstract’ uses (Andersson 1971; 2006: 95–96). Thus, it can be said that expressing location is still one of the most important functions of the Estonian adessive case although the raw frequencies of a corpus analysis show different results: the abstract uses of the adessive are much more frequent than its concrete uses.

2.2. The Adposition peal ‘on’
In addition to the locative cases, location and change of location can be expressed with adpositions, adverbs, and nouns declined in terminative, interior and exterior locative cases in Estonian (Erelt et al. 1993: 71). In Estonian reference grammars, adpositions are treated as uninflected words which are used together with nouns and express together with them similar meanings as case endings. However, in comparison to cases, the use of adpositions enables to express much more diverse and precise shades of meaning. In some instances, adpositions can be used parallel to locative cases. The use of the adessive and the adposition *peal* is one such instance. In comparison with adpositions, the meaning of cases is said to be much more abstract and the usage range much broader. Thus, although it is possible to use both the adpositional and allative construction with the sentence ‘He put the book *on(to) the table*’ - *Pani raamatu lauas pea*le ~ *Pani raamatu lauase pea*l - no such parallel use is possible with the sentence ‘He gave the book *to the boy*’, where only the allative construction is possible in Estonian – *Andis raamatu poisile* (Erelt et al. 1995: 33–34; Erelt, Erelt, Ross 2007: 191; Palmeos 1985) This is in line with the general claims made about the differences between adpositions and case affixes (Comrie 1986, Hagège 2010, Lestrade 2010b).

A distinctive morphological characteristic of Estonian adpositions is that like locative cases they constitute three-member sets that are semantically and grammatically divided into the lative, locative, and separative forms (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 source and takes an elative or ablative case ending. The adposition *peal* takes external locative case endings: *pea*le ~ *pea*l ~ *peal*t (see Table 2). In the present article we only look at the locative form *peal*, although it would be a very interesting research topic 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 (see Lestrade 2010a for a study on a similar topic in Finnish).

**Table 2.** The three-member sets of Estonian postpositions sees ‘in’ and *peal* ‘on’

<table>
<thead>
<tr>
<th></th>
<th>LATIVE</th>
<th>LOCATIVE</th>
<th>SEPARATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior</td>
<td>illative</td>
<td>inessive</td>
<td>Elative</td>
</tr>
<tr>
<td></td>
<td><em>si-ssee</em> ‘into’</td>
<td><em>see-s</em> ‘in’</td>
<td><em>see-st</em> ‘from in; out of’</td>
</tr>
<tr>
<td>Exterior</td>
<td>allative</td>
<td>adessive</td>
<td>ablative</td>
</tr>
<tr>
<td></td>
<td><em>pea-le</em> ‘onto’</td>
<td><em>pea-l</em> ‘on’</td>
<td><em>pea-lt</em> ‘off’</td>
</tr>
</tbody>
</table>

At the clause level, the Estonian adpositional phrase has two basic functions, that of an adverbial and adverbial modifier (Erelt et al. 1993: 137). Similarly to the locative cases, the Estonian adpositions are also polysemous. Veismann (2005, 2008, 2009) has studied the polysemy of Estonian adpositions from the cognitive linguistics perspective. The Dictionary of Written Estonian (EKSS 1995: 212–213) gives 11 meanings for the postposition *peal*, some of which are the following (examples in 4):

\[(4) \]

a. location, e.g. *Leib on lauas pea*l. ‘Bread is on the table.’
b. place, e.g. *Turu pea*l oli suur sagimine. ‘There was a big fuzz on the market.’
c. job, e.g. *Ta on linnas kõrge ametiti pea*l. ‘He is on a top position in the town.’
d. instrument, e.g. *Mängi klaveri pea*l ett! ‘Play something on the piano!’
e. time, e.g. *Kell on kaksteist minutit kolme pea*l. ‘It is twelve minutes past three.’
f. etc.8
When comparing the meanings of the adposition *peal* (example 4) to those of the adessive (example 2) it can be seen that these two forms are used parallel to each other especially in the functions of expressing location, place and instrument. According to Palmeos (1985: 15) the analytic construction – genitive together with the adposition *peal* – expresses the same meaning as the synthetic adessive. At the same time, it has been claimed in Estonian reference grammars that the meaning of adpositions is more concrete and specific than that of the cases (Erelt, Erelt, Ross 2007: 191). This has been mentioned also by Palmeos (1985: 18) who notes that the analytic construction conveys the meaning more clearly than the synthetic one. This clarity of expression is partly due to the grammatical homonymy inherent in the Estonian language – in some cases, when using the synthetic construction, it is not clear whether we are expressing location or possession (example 5) and sometimes, the use of the adessive to express location is not possible, because the possessive reading is too strong.

(5) Pükstel on nõöbid.

`trousers:ADE be-PRES:SG3 buttons:NOM`

‘There are buttons on the trousers.’ ≈ ‘The trousers have buttons.’

Dialect has been also mentioned as one of the differentiating factors between the synthetic and analytic forms – the analytic construction is especially frequent in the South Estonian dialects (Palmeos 1985: 15). Bartens (1978: 55) who studied the parallel use of adpositions and locative cases in the Saami languages has also pointed out that dialect plays a role. We also acknowledge that the dialectal background of language users may play a role, but in the present study we have not tested systematically the influence of this factor – this is left for future work.

Although this kind of parallel use of Estonian synthetic and analytic forms constitutes as a very interesting language phenomena, there are to date no detailed studies on this topic, excluding one small-scale study done by Rannat (1991). However, her analysis proceeded from assumptions different to ours. The aim of Rannat’s (1991) study was to analyse the Estonian locative cases (both interior and exterior) and all of the possible adpositions that can be used parallel to them – among this data set the synonymous use of the Estonian adessive and the adposition *peal* was just a very small part. Rannat (1991) concludes, based on her intuition, that the preference of either the synthetic or analytic form does not depend on the syntactic composition of the clause (e.g. the transitivity of the predicate verb) and that instead, it may depend, for example, on the clause stress – adpositions are stressed more than cases (Rannat 1991: 15). In addition, Rannat (1991: 52–54) points out that the preference may also depend on idiolect and on the preference developed already during language acquisition. The authors of the present article acknowledge that these factors may also influence the use of the adessive and the adposition *peal*. At the same time, we do not feel comfortable discarding completely the syntactic factor either, i.e. we believe the syntactic properties of these constructions may also influence the use of adessive and adposition *peal*. But again, we have not, in the present study, systematically manipulated with these factors and testing the influence of these is left for the future.

### 3. Experimental Design: Predictions
The two experiments described in this paper were designed to study how specific semantic factors contribute to the parallel use of the Estonian adessive case and the adposition *peal*. A set of predictions were made based on previous studies on similar research topics in other Finno-Ugric languages and on our intuition; these predictions are presented below in three groups: (1) type of relation between the Trajector and Landmark, (2) type of Landmark, (3) type of contact between the Trajector and Landmark.

### 3.1. Type of relation between Tr and Lm

The Estonian adessive and the adposition *peal* express a number of meanings in Estonian (cf. sections 1.1. and 1.2.) and both of these constructions may express spatial or abstract relations between a Tr and a Lm. Bartens (1978) demonstrated that in the Saami languages analytic constructions are used when the spatial relation between the Tr and Lm is somewhat noncanonical, i.e. it differs to some extent from the everyday situation. In case of a canonical spatial relation we predict that the use of the adessive and the adposition *peal* is of the same frequency and that other factors play a role here (e.g. the type of Lm, the type of contact between Tr and Lm). This set of predictions is directly related to the general claim that cases generally express a more abstract meaning than adpositions (Comrie 1986, Erêt et al. 1995: 34, Hagège 2010: 37). Taking this information into consideration, we can expect the following three predictions to hold in connection with the type of relation between Tr and Lm:

*Prediction 1:* The adposition *peal* will be used in case of noncanonical spatial relations.

*Prediction 2:* The adposition *peal* and the adessive will be used with the same frequency in case of canonical spatial relations.

*Prediction 3:* The adessive will be used in case of abstract relations.

### 3.2. Type of Landmark

Bartens (1978) also demonstrated that in the Saami languages the synthetic constructions are used when the Landmark is a place. However, when the Landmark is a thing (e.g. a container) then the adpositional construction is more frequent. The same has been demonstrated by Ojutkangas (2008), who has studied the parallel use of the interior locative cases and the corresponding adpositions in Finnish. Although Ojutkangas (2008) does not claim so, it can be concluded based on the data she presents, that the case construction is also more frequent than the adpositional construction with human Landmarks (i.e. body parts). Thus we can expect the following three predictions to hold in connection with the type of Lm in canonical spatial relations:

*Prediction 4:* The adposition *peal* will be used with canonical spatial relations where the Landmark is a thing.

*Prediction 5:* The adessive will be used with canonical spatial relations where the Landmark is a place.

*Prediction 6:* The adessive will be used with canonical spatial relations where the Landmark is a body part.

### 3.3. Type of contact between Trajector and Landmark


We predict that the type of contact between the Trajector and Landmark will also influence the use of the Estonian adessive and the adposition *peal* in case of canonical spatial relations. We predict that when there is a fixed contact between the Tr and Lm, the adessive will be used. A Tr may be fixed onto a Lm in a number of ways: for example, it can be glued onto a Lm or fixed with screws. This prediction is based on the intuition that when the Tr and Lm are in close contact, the locative function of the adessive may come very close to the other important function of the adessive – that of expressing possession. Of course we realise that determining whether something is fixed or the level of fixedness is not a straightforward question and that other researchers may reach a different conclusion. However, based on the information above, we can expect the following prediction to hold in connection with the type of contact between Tr and Lm:

**Prediction 7:** The type of contact affects the use of the adessive – the more fixed the contact between Tr and Lm in a canonical spatial relation, the more probable it is that the adessive is used.

In order to test the validity of the above listed predictions, two linguistic experiments were designed – an open production task using photos (Ojava 2009) and a forced choice task using multiple-choice sentences (Keskülä 2009). Since both of these tasks tested the same predictions and used similar stimuli, we find it practical to analyse and present the results of these studies together according to the predictions. We will first give a short description of the experiments, which is followed by the discussion of the results.

4. Method

We have chosen to use two linguistic tasks – a production task and a forced choice task – as our research method for various reasons. First and foremost, the use and importance of experimental methods has been constantly stressed in recent discussions about the most appropriate methodology in Cognitive Linguistics (Carlson, Hill 2007: 250–276; Gibbs 2007: 3–5; Talmy 2007: xi-xxi; Veismann 2008: 335–336). Another important reason for opting for this kind of methodology is the fact that in the field of Estonian linguistics experimental studies are still scarce and there are only very few studies of this type (e.g. Keskülä 2009, Klavan 2008, Ojava 2009, Veismann 2008). Furthermore, the research topic of the parallel use of Estonian adessive and the adposition *peal* has so far been studied using only qualitative intuition-based methodology (Rannat 1991, Vainik 1995). The authors are, however, convinced that the best research results can be obtained using a variety of methods. It is important to find the right balance between qualitative and quantitative analyses.

4.1. Stimuli

4.1.1. Production task. 12 photos were taken for the production task which depicted such a spatial relation between the Tr and Lm where the Tr was placed on top of the Lm. When making the photos we manipulated with the different factors that in our opinion may influence the parallel use of the Estonian adessive and adposition *peal*: the type of relation between Tr and Lm (canonical vs. noncanonical spatial relation), the type of Lm (a place, a thing, a body part) and the type of contact between Tr and Lm (fixed vs. unfixed). The photos depicted 12 different Trajectors (a shelf, stickers, a girl, a book, a chair, a stain, a box, a parrot, a lid, a ladle, posters) and 7 different Landmarks (a wall, a window, an alarm-clock, a T-shirt, a shoulder, a pot).
4.1.2. Forced choice task. For this experiment an electronic questionnaire was composed consisting of 16 sentences with 16 different Trajectors (a shelf, a girl, a book, a chair, a vase, a stain, a box, a parrot, a lid, a ladle, Christmas decorations, a poster, a mother, emphasis, forgetting a friend’s birthday, counting) and 11 different Landmarks (a wall, a window, an alarm-clock, a table, a shirt, a shoulder, a pot, a market, a heart, fingers, studies). The sentences were composed so as to vary the type of relation between Tr and Lm (abstract relation, canonical and noncanonical spatial relation), the type of Lm (a place, a thing, a body part) and the type of contact between Tr and Lm (fixed vs. unfixed).

4.1.3. The factors. Since the predictions made about the factors influencing the use of the Estonian adessive and the adposition *peal* were the same for these two tasks, we have presented the situations depicted by the photos used in the production task and the sentences used in the forced choice task together in Table 4. By agreement we have used in our analyses the English translations with adpositional constructions to describe the different conditions, although in Estonian all of these scenes can be expressed with the adessive or the adposition *peal*. Table 4 presents the photos and sentences used in the experiment and indicates which value of the three factors – the type of relation between Tr and Lm, the type of Lm, the type of contact between Tr and Lm – the specific photo/sentence expresses.

Table 4. Photos and sentences used in the experiments (NA – not applicable)

<table>
<thead>
<tr>
<th>Photos/Sentences</th>
<th>Relation</th>
<th>Landmark</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) mother on the market</td>
<td>Canonical spat. rel.</td>
<td>place</td>
<td>unfixed</td>
</tr>
<tr>
<td>2) lid on the pot</td>
<td>Canonical spat. rel.</td>
<td>thing</td>
<td>unfixed</td>
</tr>
<tr>
<td>3) box on the shoulder</td>
<td>Canonical spat. rel.</td>
<td>body part</td>
<td>unfixed</td>
</tr>
<tr>
<td>4) stickers/Christmas decorations on the window</td>
<td>Canonical spat. rel.</td>
<td>place</td>
<td>fixed</td>
</tr>
<tr>
<td>5) posters on the wall</td>
<td>Canonical spat. rel.</td>
<td>place</td>
<td>fixed</td>
</tr>
<tr>
<td>6) parrot on the shoulder</td>
<td>Canonical spat. rel.</td>
<td>body part</td>
<td>unfixed</td>
</tr>
<tr>
<td>7) stain on the shirt</td>
<td>Canonical spat. rel.</td>
<td>thing</td>
<td>fixed</td>
</tr>
<tr>
<td>8) shelf on the wall</td>
<td>Canonical spat. rel.</td>
<td>place</td>
<td>fixed</td>
</tr>
<tr>
<td>9) girl on the window</td>
<td>Canonical spat. rel.</td>
<td>place</td>
<td>unfixed</td>
</tr>
<tr>
<td>10) vase on the table</td>
<td>Canonical spat. rel.</td>
<td>thing</td>
<td>unfixed</td>
</tr>
<tr>
<td>11) ladle on the pot</td>
<td>Noncanonic. spat. rel.</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>12) book on the alarm-clock</td>
<td>Noncanonic. spat. rel.</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>13) chair on the table</td>
<td>Noncanonic. spat. rel.</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>14) counting on the fingers</td>
<td>Abstract Relations</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>15) emphasis on the studies</td>
<td>Abstract Relations</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>16) forgetting the birthday on the heart</td>
<td>Abstract Relations</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

All of the 16 situations presented in Table 4 were used in the forced choice task, only 12 of these were included in the production task – photos nr 2–13. The first factor – ‘type of relation between Tr and Lm’ – has three values: abstract relation, canonical spatial relation, noncanonical spatial relation. By abstract relations we mean such situations where at least one of the objects participating is abstract (e.g. *counting, forgetting, emphasis*) or the relation itself is abstract, (e.g. a meaning transfer in *forgetting the birthday is on his heart*). Spatial relations are such relations that express the location of the Tr in relation to the Lm; in case of the adessive and the adposition *peal* it
is the location of one object on top of another object. Spatial relations can be either canonical or noncanonical. By canonical we mean everyday, normal spatial scenes (e.g. shelf on the wall, lid on the pot). By noncanonical we mean such spatial scenes where the Tr and Lm have swapped places (e.g. a book on the alarm-clock – in the canonical situation the book would be the Lm and the alarm-clock the Tr) or the Tr is normally in a different spatial relation with the Lm (e.g. a ladle on the pot vs. a ladle in the pot). We acknowledge, of course, that the issue of canonical vs. noncanonical is tricky, but in the present study we have proceeded from the division described above. Nine photos (nr 2–10 in Table 4) and ten sentences (nr 1–10 in Table 4) depicted canonical spatial relations. Noncanonical spatial relations were expressed in three photos and sentences (nr 11–13 in Table 4). Abstract relations were expressed in the three sentences used in the forced choice task (nr 14–16 in Table 4).

The factors ‘type of Landmark’ and ‘type of contact between Tr and Lm’ were only taken into account with photos and sentences expressing canonical spatial relations – i.e. nine photos in the production task and ten sentences in the forced choice task. There were four photos (nr 4, 5, 8, 9 in Table 4) and five sentences (nr 1, 4, 5, 8, 9 in Table 4) with ‘place’ as the Lm; three photos and sentences with ‘thing’ as the Lm (nr 2, 7, 10 in Table 4); and two photos and sentences with ‘body part’ as the Lm (nr 3 and 6 in Table 4).

The factor ‘type of contact between Tr and Lm’ could not be expressed in the forced choice task as well as in the production task, because while in the production task the contact was presented to the subjects via photos, then in case of the sentences of the forced choice task the subjects were free to ‘imagine’ the contact expressed by the sentence. Different subjects may, thus, have had different images of the presumed fixedness of the contact. Nevertheless, in our opinion, the contact is not fixed between the Tr and Lm on five photos (nr 2, 3, 6, 9, 10 in Table 4) and in six sentences (nr 1, 2, 3, 6, 9, 10 in Table 4). The contact is, however, fixed in four photos and sentences (nr 4, 5, 7, 8 in Table 4).

4.2. Participants

55 graduate students from the University of Tartu aged between 19 and 53 participated in the production task. 50 of the subjects were women and 5 men. 83 people aged between 15 and 71 participated in the forced choice task. 55 subjects were women and 28 were men. All reported to be native speakers of Estonian.

4.3. Procedure

4.3.1. Production task. Stimuli were presented to the participants in one randomised block for 15 seconds with the data projector on the wall with one second between them. Participants were given answer sheets containing the number of the photo and the noun referring to the Figure (e.g. girl, vase) and were asked to describe the location of the Figure so as to make each answer describe the corresponding photo projected on the wall.

4.3.2. Forced choice task. Stimuli were presented to the participants electronically via the Internet in one randomised block consisting of the entire set of 16 sentences. In the questionnaire the subjects were asked to choose for each sentence whether the construction with the locative case or the adposition was more natural in their opinion and explain in a few words their response. The subjects were not allowed to choose both of the variants nor leave a sentence without a response. The
results may have been influenced by the fact that in the questionnaire, the version with the adessive construction was presented first to the subjects, as in example 6:

(6) a) vaas on lual [adessive construction: ‘the vase is on the table’]
   b) vaas on laua peal [adpositional construction: ‘the vase is on the table’]

5. Results and discussion

Table 5 presents the results of the production task and Table 6 the results of the forced choice task. Results are presented in these tables for each photo or sentence separately and are given in the same order as in Table 4 to facilitate comparison.

Table 5. Results of the production task

<table>
<thead>
<tr>
<th>Photos</th>
<th>adessive</th>
<th>peal</th>
<th>other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) lid on the pot</td>
<td>9 (16%)</td>
<td>46</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>3) box on the shoulder</td>
<td>45 (82%)</td>
<td>8</td>
<td>2</td>
<td>55</td>
</tr>
<tr>
<td>4) stickers on the window</td>
<td>30 (54%)</td>
<td>19</td>
<td>6</td>
<td>55</td>
</tr>
<tr>
<td>5) posters on the wall</td>
<td>47 (85%)</td>
<td>8</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>6) parrot on the shoulder</td>
<td>40 (73%)</td>
<td>15</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>7) stain on the shirt</td>
<td>33 (60%)</td>
<td>21</td>
<td>1</td>
<td>55</td>
</tr>
<tr>
<td>8) shelf on the wall</td>
<td>25 (45%)</td>
<td>16</td>
<td>14</td>
<td>55</td>
</tr>
<tr>
<td>9) girl on the window</td>
<td>25 (46%)</td>
<td>27</td>
<td>3</td>
<td>55</td>
</tr>
<tr>
<td>10) vase on the table</td>
<td>37 (67%)</td>
<td>17</td>
<td>1</td>
<td>55</td>
</tr>
<tr>
<td>11) ladle on the pot</td>
<td>3 (5%)</td>
<td>50</td>
<td>2</td>
<td>55</td>
</tr>
<tr>
<td>12) book on the clock</td>
<td>1 (2%)</td>
<td>54</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>13) chair on the table</td>
<td>11 (20%)</td>
<td>44</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>306 (46%)</td>
<td>325</td>
<td>29</td>
<td>660</td>
</tr>
</tbody>
</table>

Table 6. Results of the forced choice task

<table>
<thead>
<tr>
<th>Sentence</th>
<th>adessive</th>
<th>peal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) mother on the market</td>
<td>77 (93%)</td>
<td>6</td>
<td>83</td>
</tr>
<tr>
<td>2) lid on the pot</td>
<td>12 (14%)</td>
<td>71</td>
<td>83</td>
</tr>
<tr>
<td>3) box on the shoulder</td>
<td>42 (51%)</td>
<td>41</td>
<td>83</td>
</tr>
<tr>
<td>4) Christmas decorations on the window</td>
<td>41 (49%)</td>
<td>42</td>
<td>83</td>
</tr>
<tr>
<td>5) posters on the wall</td>
<td>50 (60%)</td>
<td>33</td>
<td>83</td>
</tr>
<tr>
<td>6) parrot on the shoulder</td>
<td>35 (42%)</td>
<td>48</td>
<td>83</td>
</tr>
<tr>
<td>7) stain on the shirt</td>
<td>36 (43%)</td>
<td>47</td>
<td>83</td>
</tr>
<tr>
<td>8) shelf on the wall</td>
<td>51 (61%)</td>
<td>32</td>
<td>83</td>
</tr>
<tr>
<td>9) girl on the window</td>
<td>40 (48%)</td>
<td>43</td>
<td>83</td>
</tr>
<tr>
<td>10) vase on the table</td>
<td>40 (48%)</td>
<td>43</td>
<td>83</td>
</tr>
<tr>
<td>11) ladle on the pot</td>
<td>16 (19%)</td>
<td>67</td>
<td>83</td>
</tr>
<tr>
<td>12) book on the alarm-clock</td>
<td>6 (7%)</td>
<td>77</td>
<td>83</td>
</tr>
<tr>
<td>13) chair on the table</td>
<td>18 (22%)</td>
<td>65</td>
<td>83</td>
</tr>
<tr>
<td>14) counting on the fingers</td>
<td>51 (61%)</td>
<td>32</td>
<td>83</td>
</tr>
<tr>
<td>15) emphasis on the studies</td>
<td>81 (98%)</td>
<td>2</td>
<td>83</td>
</tr>
<tr>
<td>16) forgetting the birthday on</td>
<td>67 (81%)</td>
<td>16</td>
<td>83</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>663 (50%)</td>
<td>665</td>
<td>1328</td>
</tr>
</tbody>
</table>

With the production task we received 660 answers in total (12 photos x 55 subjects), among which the adessive was used in 46 per cent of the cases, the adposition peal in 49 per cent and in 5 per
cent of answers some other construction was used. In the forced choice task the choice between the adessive and the adposition *peal* was made 1328 times (16 sentences x 83 subjects). The choice here was around 50–50.

As predicted we found that participants’ choice between the adessive and the adposition *peal* in the forced choice task was influenced by the type of relation between the Tr and Lm and the type of Lm. The effect of the type of contact between the Tr and Lm was not, however, significant. The results of the forced choice task were confirmed by a 3 (type of relation: canonical, noncanonical or abstract) x 3 (type of Lm: place, body part, or thing) x 2 (type of contact: fixed or unfixed) repeated measures analysis of variance (ANOVA). The results of the production task also confirmed the effect of these factors. A preliminary analysis of the participants’ responses was conducted using a 2 (type of relation: canonical or noncanonical) x 3 (type of Lm: place, body part, or thing) x 2 (type of contact: fixed or unfixed) repeated measures analysis of variance (ANOVA).

5.1. **Type of relation between the Tr and Lm**

5.1.1. *Noncanonical spatial relations.* According to prediction 1, the adposition *peal* rather than the adessive should be used with noncanonical spatial relations. This prediction was evaluated by comparing the mean responses of *peal* for sentences and photos expressing canonical spatial relations and in case of the forced choice task, also with sentences expressing abstract relations (Figures 1 and 2). In the forced choice task, the proportion of *peal* responses to sentences depicting noncanonical spatial relations was .84; to canonical spatial relations, .49; and to abstract relations, .2, $F(4,69) = 113.5, p < .0001$. In the production task, the proportion of *peal* responses to photos depicting noncanonical spatial relations was, .9; canonical relations .36, $F(6,88) = 155.85, p < .0001$.

![Figure 1. Proportion of *peal* responses in the forced choice task as a function of type of relation](image1)

![Figure 2. Proportion of *peal* responses in the production task as a function of type of relation](image2)

5.1.2. *Canonical spatial relations.* According to prediction 2, the adposition *peal* and the adessive should be used with the same frequency in case of canonical spatial relations. It can be seen from Figure 1 that in the forced choice task both of these constructions were chosen with more or less the same frequency: the proportion of *peal* responses was .49 and the proportion of adessive responses
thus .51. With the production task the matter is more complicated, because the participants were free to use other constructions besides the adposition *peal* and the adessive to describe a picture. Thus, the proportion of *peal* responses in the production task with canonical spatial relations was .36; the proportion of adessive responses was .59; and the proportion of other constructions was .05. Thus, it can be seen that in the production task, the proportion of adessive responses was higher than the proportion of *peal* responses.

5.1.3. Abstract relations. According to prediction 3, in case of abstract relations, the adessive should be used. This prediction was confirmed with the forced choice task – from Figure 1 it can be seen that the proportion of the adposition *peal* responses was only .2 and the proportion of adessive responses was thus as much as .8.

The results of our studies confirm the claims made in other studies that adpositions are semantically more specific than cases and that cases express more abstract relations (Comrie 1986, Hagège 2010, Lestrade 2010b, Ojutkangas 2008). Noncanonical spatial relations are not “normal” and they need extra-marking (Lughari 1991: 60). Our results demonstrate that this “extra-marking” in Estonian is done by using the adpositional construction rather than the adessive case. On the other hand, for abstract relations, the adessive case is predominantly used, again confirming the claim about the general differences between cases and adpositions. However, the more intriguing question is still unclear – in case of canonical spatial relations, are these two constructions synonymous, as the more or less equal proportion of *peal* and adessive responses in our experiments demonstrate, or are there still semantic differences between these two constructions. The following two factors will shed some light upon this issue.

5.2. Type of Landmark

Participants’ choice and use of the adessive and the adposition *peal* was also influenced by the type of Landmark used in the canonical spatial relations (forced choice task: F(4.69) = 11.17, p < .0001; production task: F(4.74) = 12.2, p < .0001).

5.2.1. Things as Landmarks. Prediction 4 stated that the adposition *peal* should be used with spatial relations with things as landmarks. The results of both the forced choice task and the production task showed that the proportion of *peal* responses was highest with things as landmarks, Figures 3 and 4. In the forced choice task, the proportion of *peal* responses with things as landmarks was .65 (Figure 3) and in the production task, this proportion was .51 (Figure 4).

![Figure 3. Proportion of *peal* responses in the forced choice task as a function of the type of Lm](image-url)
5.2.2. Places as Landmarks. Prediction 5 stated that the adessive should be used with spatial relations where the Lm is a place. The results of the both tasks show that the proportion of adessive responses was indeed highest with places as landmarks. It can be seen from Figure 1 that in the forced choice task the proportion of the adposition *peal* responses was only .38 – this means, that the proportion of adessive responses was accordingly .62. In the production task, the proportion of adessive responses with places as landmarks was .58, the proportion of *peal* responses .32 and the proportion of other constructions .1.

5.2.3. Body parts as Landmarks. Prediction 6 stated that the adessive should be used with body parts as landmarks. The validity of this prediction was not confirmed with these two tests, because the forced choice task and the production task showed opposite results. Although in the production task the proportion of the adessive responses (.77) with body parts as landmarks was higher than the proportion of *peal* responses (.21), in the forced choice task, the proportion of *peal* responses (.54) was slightly higher than the proportion of adessive responses (.46). Moreover, it is problematic here that only one body part (*shoulder*) was used in only two sentences. In further research, a larger variety of body parts should be included.

However, the results concerning the factor “type of Landmark” still confirm the general understanding of the difference between cases and adpositions. Adpositions are claimed to be more specific or concrete in their meaning (Comrie 1986) and this is also mirrored in the results described above. The reason why the adpositional construction rather than the adessive case is used with things as landmarks is due to the fact that the meaning of such landmarks in the spatial relation is completely concrete and there is no need for abstraction (Bartens 1978: 51). In comparison, when the landmark is a place, the likelihood of the adessive case being used is much higher, because the spatial relation is no longer as specific as with things and there is a higher level of abstractness involved in such canonical spatial relations.

4.3. Type of contact between Tr and Lm

According to prediction 7, the type of contact should affect the use of the adessive – the more fixed the contact between the Tr and Lm, the more probable it is that the adessive is used. However, no significant effect of the type of contact was found for neither of the tests on the confidence level of $\alpha = .01$. However, on the confidence level of $\alpha = .05$, this effect was significant in the production task, $F(3,93) = 5.02, p = 0.027$. Averaged across all the photos depicting canonical spatial scenes in the production task, the proportion of adessive responses to photos with fixed contact was higher (.61) than with unfixed contact (.57) (Figure 5). Nevertheless, it should be noted that with unfixed contact the proportion of the adessive responses was still very high. Although this effect was not
significant for the forced choice task, the proportions of adessive responses still differ between these two types of contact – the proportion of adessive responses is higher with fixed contact between Tr and Lm (.54) and lower with unfixed contact (.49).

![Figure 5. Proportion of adessive responses in the production task as a function of contact](image)

The results of both of the linguistic experiments demonstrated that the majority of our predictions were confirmed. We found that there was a significant effect of the following two factors: the type of relation between the Tr and Lm and the type of Lm. More specifically, the results of the tests demonstrated that when the spatial relation between the Tr and Lm is noncanonical, the preferred choice is the adposition peal (prediction 1); when the spatial relation is canonical, the adposition peal and the adessive are used with the same frequency (prediction 2); and when the relation is abstract, the adessive is used (prediction 3). Furthermore, we found evidence that the type of Landmark influences the choice between the adessive and the adposition peal: when the Lm is a thing, the adposition peal is used (prediction 4) and when the Lm is a place, the adessive is used (prediction 5). However, when the Lm is a body part, the results of these two tests showed contradictory evidence. Thus, no definite conclusions can be drawn about prediction 6. We did not find any significant effect for the function of the type of contact between Tr and Lm (prediction 7). Although the results of both the forced choice task and the production task did show a slightly higher proportion of adessive responses with a fixed contact, this may be due to chance only.

Thus, the results of our two studies nicely confirm the general claim made in literature about the differences between adpositions and cases – adpositions are indeed semantically more specific than cases (Comrie 1986). This is demonstrated by the use of the Estonian adposition peal in case of noncanonical spatial relations and canonical spatial relations with things as Landmarks. Moreover, the results of our studies also confirmed the general belief of cases being more abstract than adpositions (Hagège 2010) – the Estonian adessive case is used with abstract relations and with canonical spatial relations where the Landmark is a place; in the latter case a higher degree of abstractness is involved compared to canonical spatial relations where the Landmark is a thing, i.e. a small object compared to a larger, abstracted place (Bartens 1978: 51). Hence, we can happily agree with Hagège that indeed “it is not quite true that everything one can do with [adpositions], one can do with case markers” (2010: 37) and vice versa. The results of our studies suggest that the Estonian adessive and the postposition peal are not synonymous and that there are differences between using either of these constructions.

In addition to the factors we manipulated intentionally, the results of our experiments indicate that other semantic factors may play a role here: the type of surface of the Lm (vertical vs. horizontal) and the animacy of the Tr (animate vs. inanimate). If we compare the use of the adposition peal with vertical and horizontal surfaces, the proportion of peal responses is higher with horizontal surfaces (e.g. a table) than with vertical surfaces (e.g. a window, a wall). However, this is probably closely
related to the influence of other factors – that of fixedness and type of Landmark. When the surface of the Lm is vertical, the only way we can ensure that the Tr is in contact with the Lm is via fixedness, i.e. the Tr has to be fixed onto the Lm. As to the function of animacy of Tr, our results demonstrated a slightly higher proportion of adessive responses with inanimate Trajectores (e.g. stickers or a box); the proportion of adessive responses was lower for animate Trajectors (e.g. a girl or a parrot), where the preferred choice was instead the adposition peal. Of course, whether these effects prove to be significant or not needs to be tested with other experiments, where these factors are intentionally manipulated.

Up to now, there have been very few studies on the parallel use of the Estonian locative cases and the locative adpositions. Such studies have been qualitative rather than quantitative and based mainly on researchers’ own intuition (e.g. Rannat 1991, Vainik 1995). Since, however, the authors believe that in research one has to use a combination of methods, we opted for experimental linguistics. This, however, makes our study very different from the previous studies, which in turn does not facilitate a direct comparison with the results of previous studies. When comparing our results with the studies carried out on similar research topics in other Finno-Ugric languages, then our results demonstrated that the use of Estonian locative cases and the corresponding adpositions is very similar to Finnish and the Saami languages (cf. Bartens 1978, Ojutkangas 2008).

Although majority of the predictions we made about the use of the Estonian adessive and the adposition peal were confirmed, it is clear that the results of these two linguistic tests do not provide a full account of the entire research question. In our opinion, other factors besides the semantic ones described in this paper may influence the choice between the adessive and the adposition peal. Such factors include the animacy of the Trajector and Landmark, the word order of the clauses where the adessive or the adpositional construction is used, the morpho-phonological factors, language history, the individual preferences of language speakers and their dialectal background. Although Rannat (1991) came to the conclusion that the syntactic factors do not seem to influence the choice between the synthetic and analytic constructions, we still believe that conducting a detailed corpus analysis with the actual use of these constructions may provide further insight into this matter. The next step in our research is a detailed corpus analysis, taking into account different factors: syntactic, morphosyntactic, semantic and idiolectal.

6. Conclusion

The present article looked at the parallel use of the Estonian adessive case and the adposition peal ‘on’ in two linguistic experiments (a production task and a forced choice task). Even though the adessive and the adposition peal are generally regarded as more or less synonymous constructions, the results of the experiments confirmed our predictions that there are differences in their use. Our results confirm the general claims made about the differences between adpositions and case affixes – adpositions are more specific in meaning (Comrie 1986) and cases, conversely, more abstract (Hagège 2010). More specifically, the linguistic experiments confirmed the influence of the following factors on the parallel use of the Estonian adessive and the adposition peal: the type of relation between the Trajector and Landmark and the type of Landmark. When the relation between the Trajector and Landmark is abstract, the adessive is used; when the relation is spatial, but noncanonical, the adposition peal is used. With canonical spatial relations the adessive and the adposition peal are used with more or less the same frequency and other factors are at play – e.g. the type of Landmark and the type of contact between Trajector and Landmark. When the Landmark
used in the canonical spatial relation is a place, the language users prefer the adessive. However, when the Landmark is a thing, the preferred choice is the adposition *peal*. Although no significant effect was found for the function ‘type of contact between the Trajector and Landmark’, the language users seem to favour the adessive case when the contact is fixed. Thus, we can conclude based on these two linguistic experiments, that the use of the Estonian adessive case and the adposition *peal* is not synonymous and that there are differences in the use of these constructions.
References


1 A corpus analysis carried out using the 1980’s fiction sub-corpus of the Estonian written language (size 250,000 words; http://www.cl.ut.ee/korpused/baaskorpus) showed that the abstract uses of the Estonian adessive account for 66% of the total 2,465 occurrences; the concrete (mainly spatial) uses thus amount to 34%. Therefore, it can be concluded that the most frequent function of the adessive seems to be to express different abstract relations; nevertheless, expressing location is still an important function of the adessive.

2 A corpus analysis carried out using the 1980’s fiction sub-corpus of the Estonian written language (size 250,000 words; http://www.cl.ut.ee/korpused/baaskorpus) showed that the abstract uses of the Estonian adposition peel account for 26% of the total 52 occurrences; the concrete (mainly spatial) uses thus amount to 74%. Therefore, it seems that the most frequent function of the adposition peel is to express location.

iii All of the Trajectors and Landmarks used in the forced choice task were the same as in the production task. Only in case of one canonical spatial relation was there no one-to-one correspondence between the two tasks: in the production task a photo depicted stickers on the window, but in the forced choice task the corresponding sentence was with Christmas decorations on the window. However, in the analysis this relation is presented as parallel (stickers/Christmas decorations on the window), since the type of relation is the same (canonical spatial relation), the type of Landmark is the same (a place) and the type of contact is the same (fixed).