Encoding of motion event in Estonian

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1. Introduction

The article is an introduction to a major research project, which aims to identify how motion events are encoded in the Estonian language. The main objective of the article is to find out which regularities prevail in the categorization of the spatial characteristics of motion events in Estonian. The article focuses mainly on the regularities in the occurrence and functions of phrases other than the verbal phrase itself (NP, PP and AdvP); verbs are only briefly dealt with (see also Weisgerber in this volume). We aim to show which components of motion events are usually encoded in Estonian, which means are used to encode them, and what it might tell us about the cognitive picture of motion in the Estonian language. The article deals primarily with typical cases; an automatically generated sub-corpus of sentences containing verbs of motion served as research material (see below). The article covers only actual movement; thus, all the cases where a verb of motion is metaphorically used remain beyond the scope of the present article.

We use the following terms for describing components of motion events: AGENT (agent of motion, who moves himself), CAUSER (initiator of motion, who don't move himself), and OBJECT (moving entity, which is moved by AGENT or CAUSER). Space-related aspects comprise a separate group of components of motion events. The well-known chart (see e.g. Levinson 2003: 100), presented in Figure 1, served as the basis for studying space. The Estonian case system encodes LOCATION (inessive and adessive), GOAL (illative and allative), SOURCE (elative and ablative) (for a detailed overview of the Estonian case system see Viitso 2003: 32–35). In each pair the first member generally describes three-dimensional and the second member two-dimensional space. In addition, the Estonian language has the terminative case, which encodes the place where the agent reaches. The Estonian cases have many meanings and uses that are not included in this simplified chart. It is impossible to treat them all in the current article. The most important feature is that the adessive, allative, and ablative also and actually occur more

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often as the indirect object[2] in constructions denoting getting, giving, and owning. The above cases have also many different uses in time expressions, which are not covered by the present article.

In addition to cases, Estonian has a number of postpositions and a few prepositions that are sometimes almost synonymous with the cases but usually denote meanings that cannot be expressed by the cases (e.g. in the case of 1-dimensonal space). The most prototypical postpositions in the domain of space are presented in Figure 1. Locational postpositions may form triplets of local cases that correspond to the following categories: LOCATION, GOAL, and SOURCE (e.g. *juurde* 'to', *juures* 'at', *juurest* 'from-at'; *peale* 'onto', *peal* 'on', *pealt* 'from-on').

Figure 1

	LOCATION	GOAL	SOURCE
1 Dimension	*juures* 'at'	*juurde* 'to' terminative (-*ni*)	*juurest* ' from'
2 Dimension	*peal* 'on' adessive (-*l*)	*peale* 'onto' allative (-*le*) (terminative)	*pealt* '(from) off' ablative (-*lt*)
3 Dimension	*sees* 'in' inessive (-*s*)	*sisse* 'into' illative (-*sse*) (terminative)	*seest* '(from) out of' elative (-*st*)

Besides space points or areas, PATH is another important component of motion events. It can be expressed in Estonian by some specific pre- and postpositions (*üle* 'across', *mööda* 'along', etc.) that are rather common and form a separate semantic group. Thus, motion events can be characterized by a conceptual field, which consists of four basic spatial notions (SOURCE, GOAL, LOCATION, PATH). As one can see, this coincides more or less with the four semantic roles of Fillmore's case system (Fillmore 1977). It was not our primary goal to follow the Fillmorean system, but at the present stage of research our main interest lies in the syntax-semantics interface rather than in the deep semantic/conceptual representation of events in the spirit of e.g. Talmy or Jackendoff – this would be our next step. In particular, for instance, PATH in the sense of Jackendoff's conceptual semantics (e. g. 1990: 43) includes the

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[2] The scholarly Estonian grammar does not consider indirect object as a part of the sentence because its form does not differ from the adverbials. The discussion concerning the existence of the indirect object is still on the agenda in Estonian linguistics.

starting point (SOURCE) and the end point (GOAL) in our sense, and VIA (Route) as its components. It is this latter function (VIA) that corresponds to our concept of PATH. It would be too complicated and (as we think) not reasonable, from the theoretical point of view, to try to formulate direct connections between a morfosyntactic structure and the deep semantic level as represented by Jackendoff's or Talmy's approaches (for discussion on the differences of the treatments see e. g. Talmy 2000: 26).

Further, analysis of the material revealed that an additional category, DISAPPEARANCE, was needed to fully cover space-related events; the prototypical adverb denoting DISAPPEARANCE is *away* in English and *ära* 'away' in Estonian. DISAPPEARANCE means a situation where an AGENT or OBJECT that was initially in the field of vision (or in focus) disappears as a result of the motion, and the sentence doesn't show explicitly where or in which direction the disappearance occurred (see (4)).

Examples (1–4) are provided to clarify the categories.

(1)

Poiss	läks	kodu-st	kooli	**mööda**	**tänava-t.**
boy	go.PST	home-ELAT	school.ILL	along	street-PART
AGENT	VERB	SOURCE	GOAL		PATH

 'The boy went from home to school **along the street.**'

(2)

Poiss	jooks-is	koera-ga	**põllu-l**	kuni	jõud-is	**metsa-ni.**
boy	run-PST	dog-COM	field-ADE	until	reach-PST	forest-TERM
AGENT	VERB	COMPANION	LOCATION		VERB	GOAL

 'The boy ran with the dog **in the field** until he reached **the forest**.'

(3)

Poiss	viska-s	palli	**korvi.**
boy	throw-PST	ball.PART	basket.ILL
CAUSER	VERB	OBJECT	GOAL

 'The boy shot the ball **into the basket**.'

(4)

Poiss	läks	**ära.**
boy	go.PST	away
AGENT	VERB	DISAPPEARANCE

 'The boy went **away**.'

The manner of motion (e.g. *fast, jumping*, etc) and time are also important when describing motion events, but the present article does not discuss them.

A considerable number of the phrases that denote SOURCE, LOCATION, GOAL, or PATH function syntactically as adverbials of place. The Estonian scholarly grammar divides adverbials of place into five groups:

1) lative adverbial of place (GOAL);

2) locative adverbial of place (LOCATION);

3) separative adverbial of place (SOURCE);

4) terminative adverbial of place (motion towards a place, GOAL);

5) prolative adverbial of place (PATH). (Erelt et al. 1993: 71–72).

It is also possible to express spatial meanings of motion events by using other constituents than adverbials; the present article discusses some of the possibilities, but further research is needed.

The article has the following structure. At first, we will introduce the material followed by a short overview of the verbs of motion that occurred in the material. Then sections on SOURCE, GOAL, PATH, LOCATION, and DISAPPEARANCE will follow; a separate sections are devoted to the verb *käima* 'go to and from' and the less frequent components of motion events.

2. Data: method and corpus

The article is based on a mini-corpus of 1,168 sentences, which were automatically extracted from the Word Disambiguation corpus of Estonian by using Estonian WordNet (EstWN).

Our research is based on the assumption that the predicate verb acts as the nucleus of the sentence and determines the situational type of the whole sentence. If the core sense (i.e. literal meaning) of a verb is related to motion, it can be considered a verb of motion. However, motion can be expressed by the verb, which literal meaning is not motion at all. For example, verb *punuma* has core (literal) meaning 'to enlace, entwine, interlace, intertwine, lace, twine, twine together, twist together', but *punuma* can be also used in the sense 'to move rapidly, scamper, scurry, scuttle, skitter'.

It is possible to automatically identify the meanings of verbs in Estonian by using the Estonian WordNet[3] (EstWN, see Orav, Vider 2005) where the word meanings are organized

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[3] http://www.cl.ut.ee

into synonym sets or synsets. In order to differentiate between word senses (meanings) and semantic units represented by synsets the latter ones are usually called concepts.

Synsets are interconnected by various lexical or semantic relations. EstWN is a part of the EuroWordNet[4] where 8 different languages are interlinked by the Interlingual Index (ILI). The entries of the ILI come mostly from the original WordNet version 1.5 (Miller 1990), created at Princeton University.

The most important semantic relation between the synsets is hyponymy (IS A or IS KIND OF), which creates ontological hierarchies. Ontological hierarchies usually consist of nominal senses, but verb senses can also be classified into general and more specific senses. At the very top of a hierarchy is the synset that contains the most general concepts; the sub-hierarchies that contain narrower meanings are located at the lower levels. We focus on motion-related hierarchies and verb synsets. The top verbs of the hierarchy, which include almost all the senses of motion verbs, are the following:

1) liigutama(2) – *'make move, displace, move – cause to move*[5]*'* with 123 synsets in subtree
2) liikuma(3) – *'move, change position'* with 223 synsets in subtrees

Verbs as lexical units are more polysemous than nouns (Fellbaum 1990), and their senses are more dependent on the arguments and collocations with which they co-occur in a sentence. The verb senses under discussion include some of the senses of the highly polysemous and the most frequent verbs in Estonian *käima* 'walk, visit'*, minema* 'go'*, ajama* 'drive'*, andma* 'give'*, panema* 'put' as well as verbs the meanings of which are entirely related to motion – e.g. *lendama* 'fly'*, sõitma* 'ride'*, sagima* 'bustle around'*, tuiskama* 'drift'*, hõljuma* 'hover'*, keerama* 'turn'*, viskama* 'throw'*, tirima* 'drag'*, vedama* 'carry'*, kerima* 'wind'*, ringlema* 'circulate'*, põikama* 'dodge'*, vehkima* 'brandish'. Nevertheless, there are also verbs that are quite polysemous but rarely encode motion, for example, *koguma* 'gather' in synset <*kuhjama* 'pile up', *koguma* 'gather'>.

The top verbs of the hierarchies *liikuma* 'move' and *liigutama* 'cause to move' represent an important feature in Estonian verb derivation. Transitive verbs, often with a causative meaning, can be derived from the intransitive stem by adding the derivational affix *ta/da* to the verb. Similar derivational verb pairs denoting motion include *hajuma/hajutama* 'dissipate/cause to dissipate'*, kerkima/kergitama* 'rise/raise'*, kõikuma/kõigutama* 'rock/cause to rock'*, veerema/veeretama* 'roll/cause to roll'.

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[4] http://www.illc.uva.nl/EuroWordNet//
[5] Translation equivalent in English WN1.5

The Word Sense Disambiguation (WSD) Corpus of Estonian contains about 100,000 tokens from fiction texts of the 1980s that are annotated with the EstWN sense numbers. We extracted from the corpus those sentences that included any verb sense belonging to the MOTION hierarchy; this procedure resulted in a MOTION sub-corpus of 1,168 sentences. The sub-corpus includes only those sentences where the verb denoting motion was in the finite form. The sentences were then cut into finite clauses separated by punctuation marks or conjunctions. The finite clauses where a predicative verb denoted motion were analysed in greater detail.

3. Verbs of motion

The most frequent motion verbs in the corpora included *tulema* 'come' (2 senses), *minema* 'go' (5 senses), *käima* 'walk, go to, visit' (5 senses), *tooma* 'bring' (1 sense)*, jõudma* 'arrive' (1 sense), *sõitma* 'ride' (4 senses), *astuma* 'step' (2 senses), *viima* 'take, bring somewhere else' (1 sense). As the synset is the elementary unit of WordNet, our material allows the identification of the most frequent synsets and the dominant members of the more frequent synsets. Table 1 presents the statistical data on the frequencies (F) of the members of the various synsets in the material and the most frequent verbs representing a synset.

Table 1. More frequent verb synsets and their members

Synset F	Synset id and Interlingual Index equal synonym	F	verb
113	51@v – arrive, get, come	68	tulema
		37	jõudma
		5	saabuma
		2	kohale_jõudma
		1	pärale_jõudma
98	718@v – travel away, depart, go away, go	98	minema
70	1550@v – come, come up	70	tulema
55	789@v – attend, go to (visit)	55	käima
46	679@v – bring, get, convey, fetch	46	tooma
46	47@v – walk, go on foot, foot, leg it, hoof, hoof it	21	kõndima
		10	sammuma
		8	astuma
		7	käima
31	5984@v – take, bring	31	viima
27	9363@v – step, take a step	27	astuma
25	976@v – sit down, sit	17	istuma
		8	istet_võtma
25	48@v - ride	25	sõitma
22	31@v – throw, project through the air	18	viskama
		4	heitma
22	880@v – leave, go forth, go away	22	kaduma

21	667@v – pull, draw by force	11	tõmbama
		5	tirima
		3	sikutama
		2	kiskuma

The table shows convincingly that all the synsets containing several members have a dominant member, which is twice or even more frequent than the next member. It is a clear indicator that the concepts are centred around one prototypical representative.

4. SOURCE

The SOURCE of motion is usually expressed in Estonian by a separative adverbial of place. The starting point of motion is encoded by the following means:

a) NP in elative expressed by suffix –*st* ;

b) NP in ablative expressed by suffix –*lt;*

c) PP, primarily a postpositional phrase;

d) adverb of place, incl. pro-adverb *sealt* 'from there' or *siit* 'from here';

e) supine construction, that is, a non-finite verb form with suffix –*mast* (e.g. *tuli söömast* 'lit. came from eating': sööma 'to eat').

The elative and ablative cases usually have a synonymous postpositional phrase. For example, *pealt* 'from the surface' is almost equal to the ablative ending –*lt* (*laua pealt = laualt* 'from the surface of the table'), and *seest* 'from inside' has almost the same meaning as the elative ending -*st* (*kasti seest = kastist* 'from the inside of the box') – both are translated into English using the preposition 'from', and thus no difference can be made between them in translated texts. However, there are rather frequent constructions with local case forms that are not related to space and for them synonymous PP is not possible as for example *rääkis kasti–st* ('talked about box'). So it seems that the main difference between the two encoding methods is that the PP is more clearly related to the spatial meaning of locative expression.

4.1. NP in elative case

The words in the **elative** denoting SOURCE occurred 49 times in our material. Most of the cases represent a clearly defined 3-dimensional space, for example, *toast* 'from inside the room' in sentence 5.

(5)

Ema	tule-b	TOA-ST.
mother	come-3.SG	room-ELAT

'Mother comes **from the room**'

The elative case may also occur in Estonian if the referent is not only the designation of the starting point of motion, but also more complex semantic processes are involved. In such cases the PP as a synonymous option is usually impossible. Example 6 refers to an institution rather than a location. The native speaker of Estonian understands that the music teacher had once studied at Peda (Colloquial for Tallinn Pedagogical University); the starting of the motion is somewhat metaphorical although the motion has actually taken place.

(6)

Mei-le	tul-i	**Tallinna**	**Peda-st**	laulu-õpetaja.
1.PL-ADE	come-3.SG.PST	Tallinn.GEN	Peda-ELAT	song.GEN-teacher

'A music teacher from **Tallinn Peda** came to us'

4.2. NP in ablative case

SOURCE occurred in the **ablative** case 19 times and in our corpus typically denoted specific two-dimensional space; in example 7 *kartulipõld* 'potato field'.

(7)

Vana-ema	ja	Mari	tul-i-d	kahekesi	**kartuli-põllu-lt**
Grand-mother	and	Mari	come-PST-3PL	in.pair	potato-field-ELAT

'Grandma and Mari returned **from the potato field**'

According to our data 2-dimensional SOURCE is less frequent than 3-dimensional. Actually, as we will see in conclusion (see Table 2), the same tendency occurs in other parts of motion event as well. Motion is prototypically encoded in 3-dimensonal space.

4.3. PP

Adpositional phrases denoting location and the starting point of motion were rarely present in the material (PP related to the temporal aspect occurred often, but the article does not discuss it). The following postpositions occurred in the description of motion events and denoted indeed the starting point of motion: *vahelt* 'from-between' (2 times), *äärest* 'from-at'

(1), *alt* 'from-under' (1), *juurest* 'from-at' (2), *kõrvalt* 'from-beside' (1), *pealt* 'from-on' (1), *poolt* 'from-side-of' (1), *seest* 'from-in' (1) ja *tagant* 'from-behind' (2).

In some cases postpositions, such as *vahelt* (example 8), *poolt, juurest*, and *kõrvalt* (example 9) were related to the object the location of which was fixed in the room and allowed the description of motion. They are in the transitional area between SOURCE and PATH. This surely illustrates one of the problems of our approach: without taking into account the broader context of the situation it is often impossible to identify the proper function of an argument NP or PP. For instance, the postpositional phrase NP + *vahelt* (lit. 'from between NP') may express PATH (VIA), as it apparently is the case in the examples below, but in case of other kinds of objects denoted by NP it may refer to the starting point (SOURCE) of some motion as well. It depends on how far back one wants to go in fixing this starting point.

(8)

Praokile	jää-nud	**ukse**	**vahelt**	siugle-s	kööki
ajar	left-PRTCPL	door.GEN	from-between	snake-PST	kitchen.ILL

Mants	ja	kurruta-s	tüdruku	jalu-s.
Mants	and	purr-PST	girl.GEN	feet.PL-INE

'Mants snaked its way into the kitchen **through the door** left ajar and purred at the girl's feet'

(9)

läks	**kassa**	**kõrvalt**	kaupa-de	poole
go.3SG.PST	cash register	from.side	good-PL.GEN	towards

'he walked **from the cash register** towards the goods'

4.4. Adverb

The material revealed four **adverbs** related to SOURCE: *sealt* 'from there' (7 times), *siit* 'from here' (7 times), *kust* 'from where' (5 times) and *välja* 'out of' (16 times).

The most common adverb *välja* with the noun in the elative case stresses the motion away (and usually 'out of') form a specific place or object to an indefinite place. Thus, the use of *välja* is similar to *ära* (see section 9), which denotes the disappearance of the object. However, *välja* need not express only disappearance but also motion away from and out of the SOURCE; therefore, these examples serve as manifestations of the SOURCE. Example (12) marks

the starting point of motion *voodi* 'bed' and that the OBJECT was not present after the motion (*välja* 'out of').

(10)

Lükka-si-n	naise	**voodi-st**	**välja.**
push-PST-1SG	woman.GEN	bed-ELAT	out

'I pushed the woman **out of the bed**'

4.5. SOURCE in combination with other categories

In motion events SOURCE may serve as the starting point of motion, but it can also be interpreted as PATH as was said above. It is especially true of the verb *käima* 'walk', which will be discussed in greater detail in section 7. In example (11) the verb determines that the adposition usually denoting SOURCE will be interpreted – because of the use of the elative case - as PATH: the motion first takes place towards the grave and then forwards. The example can also be interpreted so that both GOAL *haud* 'grave' and SOURCE *haud* 'grave' are encoded at the same time. But this can be considered a typical occurrences of PATH as well.

(11)

Käi-s	**haua**	**juure-st**	läbi.
walk-3SG.PST	grave.GEN	by-ELAT	PERF.ADV.

'He [came, intentionally], stopped **at the grave [and continued his walking course].** '

A sentence may contain both SOURCE and GOAL but in many cases they together denote the manner of motion, which is characterized by repeated entrance and exit. In example 12 the child moves several times from the lap (*sülest*) of SOURCE to the lap (*sülle*) of GOAL; actually, different persons are involved. Again, in this case one can ask whether we don't have here a case of PATH . If so, this means that the functions PATH and MANNER are mingled together (in particular, it seems that there cannot be a MANNER of motion when there is no PATH).

(12)

Laps	rända-s	**süle-st**	**sülle**.
child	travel-3SG.PST	lap-ELAT	lap.ILL

'The child passed **from lap to lap**'

5. GOAL

In our material GOAL covers in fact two roles: DIRECTION and GOAL (that is, the end-point of motion). As the cover category we will use GOAL since GOAL presupposes DIRECTION but not vice versa.

The following means are used to convey GOAL /DIRECTION:

1) NP in the illative (i.e. an internal local case or a three-dimensional local case) with the ending –*sse*; fusional forms without an ending are rather frequent,

2) NP in the allative (i.e. an external local case or a two-dimensional local case) with the ending –*le*,

3) adpositional phrase,

4) supine construction, more precisely, supine with the illative expressed by the morpheme -*ma*,

5) adverb of place (either in the illative or allative), including the pro-adverb *siia* 'here'

6) NP in the terminative.

5.1. NP in illative

The **noun phrase in the illative** was the most common adverbial denoting direction (lative adverbial of location) in our material (see 13–14). The noun phrase occurred 149 times, and it was the most frequent means to express motion. As for motion, an adverbial in the illative accompanying the motion verb denotes usually a three-dimensional space/location towards which the motion takes place (and where it ends).

(13)

läks	rööki-des	**koju**
go.3SG.PST	yell-INF	home.ILL

'he went **home** yelling'

(14)

sealt	saade-ti	ta	kunagi	**Puiatu-sse**
from.there	send-PSS.PST	3SG	once	Puiatu-ILL

'from there he was once sent **to Puiatu**'

5.2. NP in allative

The **noun phrase in the allative** was also rather common (57 occurrences) in the material, but its functions were more diverse than those of the noun phrase in the illative. Examples 11–14 illustrate the common usage of the allative expressing GOAL. In that case the adverbial denotes a location, which can be understood as a generic location (example 15), or a two-dimensional region of space (example 16). It could also be a functional area with a dominating (highlighted) dimension, as in example 17 (where *tänav* 'street' is understood as a two-dimensional space although it can be understood as three-dimensional as well) or the highlighted surface of the object, as in example 18 (see Vainik 1995: 57–67).

(15)

naabri-mees	lõ-i	käe-ga	ja	kihuta-s	sooja-le	**maa-le**
neighbour-man	hit-3SG.PST	hand-COM	and	dash-3SG.PST	warm-ALL	land-ADE

'the next-door neighbour gave up and dashed to a warm **country**'

(16)

Mehe-d	veda-si-d	kelku-de-ga	nooda-d	**jää-le**
man-PL	haul-PST-3SG	sledge-PL-COM	seine-PL	ice-ALL

'The men hauled the seines **onto the ice** with sledges'

(17)

Astu-si-n	**tänava-le**,	peatu-si-n	hetke-ks
step-PST-1SG	street-ALL	stop-PST-1SG	moment-TRANS

'I stepped **onto the street**, stopped for a moment'

(18)

Hoovi-s	hüppa-s	kõuts	**prügi-tünni-le**	ning	sealt	edasi	kuuri	**katuse-le**
yard-INE	jump-3SG.PST	tomcat	dust-bin-ALL	and	from.there	forward	shed.GEN	roof-ALL

'In the yard the tomcat jumped **on the dustbin** and from there on **to the shed roof**'

A noun phrase in allative typically expresses the change of possession of the object, as in example 19. Some researchers have claimed that the primary function of the external local cases in Estonian is to express possession rather than location (see Matsumura 1994).

(19)

noor-mees	süüta-s	sigareti,	andi-s	tiku-d	**kaaslase-le**
young-man	light-3SG.PST	cigarette	give-3SG.PST	match-PL	companion-ALL

'The young man lit his cigarette and gave the matches **to his companion**'

5.3. PP

Adposition phrases encoding GOAL were few in the material by comparison with the noun phrases in the local case. As for the other components of motion events, PP and synonymous NP in local case have very small difference, if there is any difference at all. PP-s are just more clearly spatial and usually can not be used in non-spatial contexts as NP-s in local case can be. PP-s are usually preferred in spoken language, especially in the case of 2-dimensional space – but apparently not in written prose, which is the source for our data. Example 20 presents a sentence that occurred in the material and an equivalent adposition phrase, which is almost equal in meaning.

(20)

Ta	istu-s	**trepi-le**	(cf. *trepi*	*peale*).
3sg	sit-3SG.PST	stairs-ALL	stairs.GEN	on-to

'He sat down **on the stairs**'

The most frequent postpositions for GOAL were *juurde* 'to', *poole* 'toward'*, alla* 'under, down'*, äärde* 'to (a border)', etc (examples 21-22) which have no synonymous NP-variants

(21)

Seepärast	astu-s	ta	ühe	**tooli**	**juurde**
because	step-3SG.PST	3sg	one.GEN	chair.GEN	to

'That is why he walked up **to a chair**'

(22)

Naine	jooks-is	**tiigi**	**äärde**,	kükita-s	kalda-le	maha
woman	run-3SG.PST	pond.GEN	to	squat-3SG.PST	bank-ALL	down

'The woman ran **to the pond**, squatted down on the bank and rinsed her face'

The material also revealed some prepositional phrases, for instance, example 23.

(23)

ja	sööst-si-d	tuule	ässituse-l	mehe-le	otse	**vastu**	**nägu**
and	dash-PST-3PL	wind.GEN	inciting-ADE	man-ALL	straight	against	face.PART

'and stirred by the wind dashed right **into** the man's **face**'

The grammaticalization of adpositions from the content nouns is characteristic of Estonian; thus, it is not always possible to accurately identify whether one is dealing with a adposition or a noun phrase. For example, the word *äärde* 'to the border' (from the word *äär* 'border', see example 22) is considered to be grammaticalized, but the word *serv* 'edge' (example 24) can be treated also as the local case of the noun.

(24)

Ranna-papp	kohenda-b	süsi,	tõmba-b	halu	**lõkke**	**serva**
coast-man	adjust-3SG	coal.PL.PART	pull-3SG	log	fire.GEN	edge.ILL

'The old man from the coast adjusts the coals and pulls a log **to the edge of the campfire**'

5.4. Supine construction

The supine construction (a combination of the infinitive ending with *–ma* and a finite verb) as an adverbial of place can express destination by extending verbs (both transitive and intransitive) that denote the relocation an entity (Erelt et al 2003: 252). In addition to marking location, the supine usually also denotes purpose (ibid). It is common to conceptualize an activity or a process as a location or an object. Helle Metslang (1993, 1995) discussed in great detail such supine constructions in Estonian. In example 25 the agent goes to a place where he rests; thus, here resting is an activity that can also be understood as a GOAL.

(25)

ja	kui	Joona	isa	mõne	aja	pärast	**puhka-ma**	**läks**
and	when	Joona.GEN	father	some.GEN	time.GEN	after	rest-SUP	go.3SG.PAST

'and when Joona's father **went to have a rest** after a while'

5.5. Adverb

The lative adverbial can be expressed by **lative adverbs** (for example *ette* and *ligi* in 26-27).

(26)

Tõmba	kohe	kardina-d	**ette**!
pull	at.once	curtain-PL	to.front

'Draw the curtains at once!'

(27)

Mina,	ehtne	kratt,	hiili-n	**ligi** ...
1SG	real	thief	sneak-1SG	to.close

'I, a real thief, sneak **close** …'

5.6. GOAL in terminative

As Estonian has the terminative case (*–ni*) to denote reaching a certain place or a boundary (see Erelt 2003) one can talk about a separate group comprising the relevant adverbials and assign them to the category GOAL. As for motion events, it is interesting to note that this GOAL is not specified with respect to dimensions presented in Figure 1: the terminating point of motion can be at something, inside something or on something. Second, the adverbials can sometimes express only an intermediate stage, from where the motion continues. From the point of view of the event, it is important that reaching this intermediate point is encoded as an accomplishment, as in (28).

(28)

kuni	jõud-si-d	ühe-taoliselt	kollase-ks	krohvi-tud	**maja-de-ni**
until	reah-PST-3SG	uniformly	yellow-TRANS	plaster-PRTCLP	house-PL-TERM

'until they reached **the houses** that had been uniformly plastered in yellow'

The terminative as the marker of the end point of the motion event occurred nine times in the material. Some of them were borderline cases in respect to motion events; for example, one can argue whether *helid jõudsid minuni* 'the sounds reached me' can literally be considered a motion event.

NP in the terminative can encode the end point of motion also in a more complicated way. In example 29 a woman walks into the water and the motion ends when she is *reiteni vees* 'thigh-high in the water'. The example shows how the encoding of a motion event depends on the point of view of the observer. If somebody walks into the water, it is usually not possible to say how far she went from the shore; what matters and can be described is the part of the body that the water reached.

(29)

Naine	läks	reite-ni	vette.
woman	go.3SG.PST	thigh-TERM	water.ILL

 'The woman went thigh-high into the water'

6. LOCATION

LOCATION is usually expressed by a locative adverbial of place in Estonian.

The following means can be used to denote location:

a) NP in the inessive marked by the suffix *–s*;

b) NP in the adessive marked by the suffix *–l*;

c) PP;

d) adverb;

e) supine construction marked by the suffix *–mas*, which usually encodes at the same time both activity and the place where it is carried out.

As for their meaning, some of the postpositional phrases are in most cases virtually equal in meaning to the respective cases; for example, *peal* 'on' renders virtually the same meaning as the adessive ending *–l* (*laua peal = laual* 'on the table') and *sees* 'in' is equal to the inessive ending *–s*.

The supine construction can in principle occur along with many verbs of motion, but in our material it accompanied only the verb *käima* 'walk, go to-from', which will be explored in subsection 7.

In the case of some verbs the grammatical object may denote a location where the activity takes place. This is the case with the verb *läbi jalutama* (+direct object) 'walk through, walk everywhere in' as well as with some other verbs with the adverbial component *läbi*. For instance, in example 30 two people have walked through the whole republic, which is grammatically encoded as an object of impersonal clause *terve vabariik* 'the whole republic'.

(30)

Terve	**vabariik**	nei-l	kahe-l	läbi	jaluta-tud
whole	republic	3PL-ADE	two-ADE	through	walk-IMPERS.PRTCPL

'**The whole republic** has been walked through by these two'

6.1. NP in adessive

The material contained nineteen **adverbials in the adessive.** The word *tänav* 'street' or *tänavad* 'streets' were repeatedly mentioned as LOCATION; sometimes a specific and other times a generic street was meant, as *tänaval* 'in the street' in example 31.

(31)

Meie	käi-me	**tänava-l**	ja	midagi	meie-ga	ei	juhtu.
1PL	walk-1PL	street-ADE	and	something	1PL-COM	NEG	happen

'We are walking **in the street** and nothing happens to us'

An adverbial with a three-dimensional rather than two-dimensional meaning can also occur in the adessive case. In example 32, the storey is considered to be space rather than a surface; nevertheless, it is expressed by means of the adessive. Actually, the word *tänaval* 'in the street' in the previous example is also regarded as space rather than a surface. Thus, one can claim that the adessive often also denotes three-dimensional space that is defined by a certain surface: storey as space is defined through the floor and the street as space through the surface of the street.

(32)

Kola-si-me	Lotte-ga	veel	Schilleri	**maja**	**alumise-l**	**korruse-l**
walk-PST-1PL	Lotte-COM	more	Schiller.GEN	house.GEN	lower-ADE	floor-ADE

'Lotte and I then walked around **on the ground floor of** Schiller's **house**'

If the location is an NP encoded by the adessive, it denotes an entity through which the space is metonymically defined rather than the explored location. In example 33 it is a wire on which the bird is sitting. The bird has literally not enough space on the wire; thus, one understands it as space that adjoins the wire and which is defined by the point of contact between the bird and the wire.

(33)

Pääsuke	lenda-s	üle	me	pea-de,	teine	kiiku-s	rahutult	**traadi-l**

swallow	fly-3SG.PST	over	1PL	head-PL.GEN	second	swing-	restlessly	wire-ADE
						3SG.PST		

'A swallow flew over our heads, another was swinging restlessly **on the wire**'

Example 34 where the letter was sent 'lit. on my address' *minu aadressil* could be treated in a similar way; the address is an attribute of the place of residence rather than a location in its literal sense.

(34)

Ja	siis	tule-b	kauni-l	sügis- päeva-l	kiri,	sealt	edasi	**minu**	**aadressi-l**.
and	then	come	beautiful	autumn-	letter	from.there	forward	1SG.GEN	address-
		-3SG	-ADE	day-ADE					ADE

'And then on a beautiful autumn day a letter arrives, and forwarded from there **to my address**'

Location can also be defined deictically in respect to some imaginary character; for example, *vasakul* 'on the left' and *paremal* 'on the right' occurred in our material.

The material contained a single postpositional phrase (*vee peal* 'on the water') that expressed a two-dimensional LOCATION.

6.2. NP in inessive

There were 30 **adverbials in the inessive** that denote LOCATION (not including extensions of the verb *käima* 'walk', see below). Most of them had clear meanings of LOCATION, as in example 35. Three sentences expressed a substance rather than a place; two of them were *õhus* 'in the air' (see example 36) and one *meres* 'in the sea'.

(35)

Vanasti	kand-si-d	niisuguse-d	**veski-s**	vilja- kotte	või	lossi-si-d	**sadama-s**	laevu.
in.old.	carry-	such-PL	mill-	grain	or	load-PST-	harbour-	ship.PL.PART
times	PST-3PL		INE	-sack		3PL	INE	

'In the old days such people used to carry sacks of grain **in the mill** or unloaded ships **at the harbour**'

(36)

pall	hüppa-s	**õhu-s**	nagu	elektri-löögi	saa-nud	konn
ball	jump-3SG.PST	air-INE	like	electricity-blow	get-PRTCPL	frog

'the ball jumped **in the air** like an electrocuted frog'

There were also some metonymic cases where a certain location was referred to through an object with which it was in contact. In example 37 the flag is fluttering not in the tower but outside of it. The phrase *pilved liiguvad lepaladvus* 'the clouds are moving in the tops of the alder trees' is literally not true; they seem to be in a location defined by the tops of the alder trees, as seen by the observer.

(37)

ja	**Tartu**	**raekoja**	**torni-s**	lehvi-s	jälle	punane	lipp
and	Tartu	Cityhall	tower-INE	flutter-3SG.PST	again	red	flag

'and the red flag was once again fluttering **in the tower of the Tartu City Hall**'

The group includes four adverbials expressed by the inessive case and denote three-dimensional space in motion events; however, their meaning cannot be taken literally. Example 38 does not refer to the interior of *laud* 'table'; the illative form *lauas* 'lit. in the table' is lexicalized in the meaning *laua juures istujate ja sööjate seas* 'among the people sitting at the table and having a meal'.

(38)

Laua-s	käi-si-d	ringi	foto-d.
table-INE	walk-PST-3PL	around	photo-PL

'Pictures were passed **around at the table'**

6.3. PP

Postpositional phrases with the meaning of three-dimensional space occurred nine times in the material. They included *ümber* 'around', *ees* 'in front of', *kohal* 'over, above' and *keskel* 'in the middle of'. Some of them (*kohal* and *keskel*) refer to their adessive origin but clearly express three-dimensional space in the contemporary language.

There were 19 pre- and postpositional phrases that clearly denoted LOCATION (*vahel* 'in between', *all* 'under', *ees* 'in front of', *juures* 'at, near', *keset* 'in the middle of', *keskel* 'in the middle of', and *kohal* 'above'). The most frequent one was *juures* (5 times); however, it was

rather rare compared to the word *juurde* 'to', which is derived from the same stem and denotes GOAL.

6.4. Adverb

Four demonstrative adverbs *siin* 'here' occurred in the material. The demonstrative adverbs are not differentiated in respect to their dimension, that is, *siin* 'here' and *seal* 'there' can theoretically be either two- or three-dimensional; all the instances of the deictic demonstrative *siin* 'here' that occurred in the material can be interpreted as three-dimensional.

6.5. LOCATION as a CONTAINER

In motion events LOCATION usually denotes the place where the motion takes place, but it can also be the CONTAINER of the object in motion, that is, some other entity in or on which the OBJECT moves. There were only three such sentences in the material (NP in the inessive, NP in the adessive, and PP). Example 39 reveals an instance where an OBJECT that has been put in the portfolio is in motion. Thus, the portfolio itself is also in motion, so the phrase *portfellis* 'in the portfolio' encodes CONTAINER.

(39)

Ta	oli	selle	süüdlaslikult	**portfelli-s**	koju	too-nud.
3SG	be.3SG.PST	this.GEN	guiltily	portfolio-INE	home.ILL	bring-PRTCPL

'He had guiltily brought it home **in portfolio**'

7. Motion events expressed by the verb *käima* (lit. 'walk')

The Estonian verb **käima** is a highly frequent verb with a peculiar valency – the adverbial in locative case instead of cases that usually express GOAL or SOURCE – and that is why it cannot be disregarded (see Pajusalu 2001: 181–184). The verb *käima* primarily means 'walk', and in that case it is synonymous with many other verbs of motion. More often, however, *käima* means 'move to and back or away from somewhere, visit', and in that case it takes an adverbial of place in the inessive or adessive case. As the verb expresses motion to and back/away from the place marked by the adverbial, then from the perspective of the whole event the adverbial often denotes both GOAL and SOURCE at the same time (of different instances of motion, though). There were 45 such adverbials in the inessive (22) or adessive

(7) or in the supine inessive (14) that extended the verb *käima*. The adverbial denotes especially clearly GOAL or SOURCE in such cases where the verb *käima* denotes repeated action: somebody moved to point X (in whatever manner, including driving) and returned. In example 40 the photographer visited the house of the speaker, that is, he came and also left later.

(40)

ühe-l	sula-lumise-l	päeva-l	käi-s	**mei-l**	päevapiltnik.
one-ADE	melt-snowy-ADE	day-ADE	walk-3SG.PST	1PL-ADE	photographer

'a photographer visited **us** on a day when the snow was melting'

As for repeated action, the spatial meaning of the adverbial accompanying the verb *käima* is not that clear. Rather, it covers GOAL, SOURCE, or LOCATION. It concerns, for example, the set phrase *koolis käima* 'go to school', which means both that the agent moves repeatedly to and from the school and that he attends school.

There were 14 cases where the supine form of the inessive accompanied the verb *käima* 'walk, visit'. Such supine verb forms encode at the same time both the activity and the location where the action is performed (Pajusalu, Orav in press). As the result of grammaticalization the above verb form can also express the progressive (see Metslang 1993), but we are interested in the supine inessive primarily as a spatial characteristic of a motion event. In sentence 41 the phrase *teda vaatamas* 'lit. seeing him' is a place adverbial of the verb *käima*, which shows that the GOAL of the motion event is to pay short visit to the person denoted by *teda*.

(41)

Innos	käi-s	teda	kaks	korda	**vaata-ma-s.**
Innos	walk-3SG.PST	3SG.PART	two	time.PART	see-SUP-INE

'Innos came to **see** him twice'

The verb *käima* is often accompanied by an adverbial of place expressed by NP; in that case the purpose of the supine inessive is to encode the activity rather than GOAL (and SOURCE), but the latter cannot be completely ruled out (example 42).

(42)

Käi-si-n	tehase	raamatukogu-s	**toru-sid**	**paranda-ma-s**.
walk-PST-1SG	factory.GEN	library-INE	pipe-PL.PART	fix-SUP-INE

 'I went to the factory library **to fix the pipes**'

In addition to the previous examples, some extensions of the verbs are in the illative, but if the sentence is in the perfective aspect, they should be treated as LOCATION. Such a verb is first and foremost *kaduma* 'disappear'. When somebody has disappeared somewhere (perfective aspect), he is actually located in the place where he disappeared. In example 43 the phrase *vahemüüri taha* 'to behind the partition wall' expresses GOAL if it occurs alone, but when accompanied by the word *kadus* 'disappeared', the adverbial can be interpreted as LOCATION from the point of view of the whole situation. However, the above examples are not reflected in the statistics of the present section.

(43)

Mai	kadu-s	**vahemüüri**	**taha.**
Mai	disappear-3SG.PST	wall.GEN	behind

 'Mai disappeared **behind the partition wall** …'

8. PATH

The PATH along which the motion proceeds from SOURCE to GOAL is an important component of motion events. As we have explained earlier, we mean by PATH just the trajectory (route) by which the motion proceeds. Estonian has no case form to mark PATH, and thus it is expressed either by the meaning of the verb itself or through grammatical words. As we are exploring parts of sentences other than the verb, we are primarily interested in the encodings of the PATH expressed by grammatical words. Similarly to the other sections of the article, the syntactic problem is whether a grammatical word functions in the sentence as an adverb or a pre- or postposition. For example, *mööda* 'along' can be either a member of PP (*teed mööda* 'along the road') or an adverb (*ta kõndis mööda* 'he walked past'). In addition, the grammatical words encoding PATH in particular can occur both as pre- and postpositions. The whole issue needs to be analysed in more detail; here, we will only deal with the most common grammatical words that express pre- or postpositions: *mööda* 'along', *üle* 'across', *ümber* 'around' and *vastu* 'against'.

PATH was encoded in the material mostly with the words *mööda* 'along' (16 occurrences as a pre- or postposition) and *üle* 'across' (16 times as a pre- or postposition). Whether *mööda* 'along' denotes PATH directly or (additionally) an area where the motion takes place depends on the meaning of the accompanying NP. If NP expresses a road or some other long object (e.g. *mööda teed* 'along the road' or *mööda vaibajooni* 'along the carpet lines'), the meaning of PATH is clear. NP accompanying *mööda* 'along' can denote an area (*mööda linnaosa* 'along the district') or a surface (*mööda kive* 'along the stones'); in that case the respective PP encodes LOCATION rather than PATH. All the *mööda*-phrases extending motion are treated as PATH in the statistics of the article because PATH is always to a greater or lesser extent present in all of them.

The word *üle* 'over, across' is also highly polysemous (for a more detailed treatment see Veismann 2004) ; its meaning becomes clear only in construction with the nominal part of the phrase. The motion can, for example, proceed *üle* toa 'across the room' or *üle jõe* 'across the river'; in that case PATH is encoded together with LOCATION. Sometimes the *üle*-phrase can be encoded as the end point of motion (*tõstis käed üle pea* 'he raised his hands over his head'); in this case PATH is combined with GOAL.

Another word that quite often expresses PATH is *ümber* 'around' (it occurred eight times as a pre- or postposition). *Ümber* 'around' encodes movement around some landmark (*ümber tule* 'around the fire' or *tema ümber* 'around her'); sometimes we are dealing with the result of the movement rather than the movement itself, and thus we can say that the respective PP encodes LOCATION rather than PATH. However, if a sentence contains a verb of motion, the co-occurrence of PP and a verb results in the encoding of PATH. Example 44 states that the scarf was tied *ümber tema tunkede* 'around his dungarees'; from the perspective of the moment when the sentence was uttered the scarf was already fixed, and did not move any more. Nevertheless, all the *ümber*-phrases are here regarded as encoding PATH because only sentences containing verbs of motion were examined.

(44)

Ümber	tema	**tunke-de**	oli	mitmekordselt
around	3SG.GEN	dungaree-PL.GEN	be.3SG.PST	number.of.times

keera-tud	kitsas	helepunane	sall.
tie-PRTCPL	narrow	bright-red	scarf.

'A narrow bright red scarf was tied **around** his **dungarees** a number of times'

The word *vastu* 'against' (seven instances as a pre- or postposition) also denotes PATH but in a slightly different way than the previously discussed *mööda* 'along' and *ümber* 'around'. The word *vastu* 'against' expresses the end point of PATH and is thus a borderline case between PATH and GOAL rather than PATH and LOCATION (as *mööda* 'along' and *ümber* 'around'). At the same time it is the PATH of motion that is clearly presented in motion events of sentences containing *vastu*-phrases; the PATH of motion is marked by the end point not PATH itself. In example 45 a man pushes a woman against the wall; the PATH along which the pushing occurs is highlighted, but it can also be interpreted as GOAL.

(45)

Siis	lükka-s	ta	naise	**vastu**	**müüri**.
then	push-3SG.PST	3SG	woman.GEN	against	wall.PART

'He then pushed the woman **against the wall**'

The examined material suggests that PATH can be expressed by various words in Estonian, but they all have multiple meanings. Therefore, first and foremost the construction of PP plus a verb is used to interpret PATH.

9. DISAPPEARANCE

DISAPPEARANCE is a rather frequent phenomenon among the spatial characteristics of motion events. In that case the sentence does not encode in any way the concrete place where the object moves but only that it disappears from the location that is in focus. The most common word denoting disappearance in Estonian is *ära* 'away', which is polysemous and extremely difficult to analyse. The main function of Estonian adverb *ära* 'away', like its synonymous adverb in many other languages, is a perfective particle, and in that function it is difficult to differentiate it from the adverb denoting disappearance. However, the material revealed 18 clear-cut cases where disappearance was encoded by the adverb *ära* 'away'. The word *ära* 'away' was most often combined with the verb *minema* 'go' (e.g. *Ma läksin ära* 'I went away'). *Ära* was also combined with other verbs of motion. In most cases, the adverbial that encoded SOURCE (in example 46 *Hiiu õllesaal* 'Hiiu beer hall´) was also present in the same sentence; at the same time, GOAL was only expressed once and by means of an indefinite pronoun (in example 47 *kuskile* 'somewhere'). This fact – that GOAL is not specified - can be

treated as evidence that the category DISAPPEARANCE is a distinct one in the general domain of motion.

(46)

Just	eile	vii-si-me	ta	Hiiu	õlle-saali-st	**ära**.
only	yesterday	take-PST-1PL	3SG. GEN	Hiiu	beer-hall-ELAT	away.

'It was only yesterday that we took him **away** from the Hiiu beer hall'

(47)

Ole-ksi-n	hea	meele-ga	kuski-le	**ära**	sõit-nud.
be-COND-1SG	good	mind-COM	somewhere-ALL	away	ride-PRTCPL

'I would have willingly gone **away** somewhere'

The material provided nine additional uses of *ära* 'away' where the adverb expressed a perfective particle rather than disappearance. We cannot completely rule out the meaning of disappearance in the sentences because the object disappears from the place mentioned in all the cases and no destination of the movement has been expressed. Such uses of the adverb *ära* occurred mostly with the verb *võtma* 'take', the meaning of which alone denotes the moving of a certain object from one place to another; the adverb *ära* adds the perfective aspect rather than the meaning of disappearance.

10.Statistical conclusions

The objective of the article was to identify the most typical and common cases of the spatial characteristics of motion events, focusing on the nominal or adverbial components (arguments) in the event descriptions and not the verbs themselves. Here, we present some of the most important trends that we discovered in our material.

Table 2 is an overview of the statistical data on how the spatial characteristics of motion events are encoded by grammatical cases. The table is not exhaustive as it does not include all the means for encoding the spatial characteristics of motion events, but only those cases that are encoded by case. The extensions of the verb *käima* 'walk' are presented separately.

Most importantly, the table shows that in all categories of motion three-dimensional local cases are more frequent than two-dimensional cases. We can also see that looking at

three main special categories of motion event (SOURCE, GOAL and LOCATION) it is GOAL that is most often encoded by a case-marked NP. This phenomenon (called also „goal-bias") has been observed in many other languages as well (see, for example, Maisak, Rahhilina 1999 for an owerview and Russian data). In addition, there is a separate case – the terminative – that marks GOAL; it does not occur very often but increases the frequency of GOAL. On the basis of the whole material one can claim that GOAL is often encoded also by other means (PP and Adv). Considering the fact that the verb *käima* 'walk, visit' denotes GOAL and SOURCE, then the number of sentences expressing GOAL would rise even more. The expression of GOAL by the supine construction is especially common. Although Estonian has different supine constructions to denote GOAL as well as SOURCE and LOCATION, only the illative supine constructions encoding GOAL and the inessive supine constructions extending the verb *käima* occurred in the material (for further discussion Pajusalu, Orav in press). As the inessive extension of the verb *käima* is situated in the transitional area between GOAL, SOURCE, and LOCATION, we can claim that the supine construction typically expresses only GOAL and its peripheries in motion events.

PATH is expressed by PPs, and DISAPPEARANCE is typically expressed by an adverb; further research is needed in order to present statistical data on PATH and DISAPPEARANCE.

Table 2. Number of instances where spatial characteristics of motion events were encoded by case among 1,168 sentences of motion

	2-dimensional cases	3-dimensional cases	terminative	supine constructions
SOURCE	19 (ablative)	49 (elative)		0 (elative)
GOAL	57 (allative)	149 (illative)	9	10 (illative)
LOCATION	19 (adessive)	30 (inessive)		0 (inessive)
incl. *käima*	7	22		14

11. Conclusions

The article focused on the means of encoding motion events in Estonian based on a mini-corpus containing 1,168 sentences with a finite form of verb of motion. The study identified both the verbs encoding motion and the means representing spatial characteristics of motion events.

Concerning the frequency of the motion verbs, one could identify a typical verb representing each semantic group; for example, for the synset 'arrive, get, come' it is *tulema* 'come', and *viskama* 'throw' is the typical verb for the synset 'throw, project through the air'.

The categories of SOURCE, GOAL, LOCATION, PATH and DISAPPEARANCE proved to be important categories in our approach with regard to encoding spatial relations; they all possess typical means of expression. Statistically, the following facts are of interest:

a) GOAL is most often encoded

b) three-dimensional local cases are more frequent

The conceptual clarity of the Estonian categories reveals variation. It is relatively easy to interpret SOURCE, GOAL, and LOCATION because they have their own grammatical cases and DISAPPEARANCE has its adverb *ära* 'away' (being at the same time a perfective particle). The major difficulties include:

a) explanation of the interaction of aspect and space. In the case of the perfect aspect the motion has already taken place and the AGENT or OBJECT has stopped;

b) interpretation of the arguments of the verb *käima* 'walk, visit'.

PATH, in the sense we adopted in our approach, is a category that is most difficult to interpret from the viewpoint of the interface between morphosyntax and semantics as it does not have its own means of expression and because the adpositions that are typically used for encoding are polysemous.

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