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Bridging the gap: Toward a cognitive semantic analysis of the Lithuanian superlexical prefix *be-*¹

Abstract

The present article explores the Lithuanian aspectual prefix *be-* from a cognitive perspective while building on the generative syntactic approach to *be-* as a superlexical prefix. The prefix *be-* is peculiar in that, while being able to stack on lower, the so-called lexical, prefixes, it is used to form a number of constructions, most notably those with continuative, prospective, or modality readings. In addition, it forms two separable compound prefixes, the continuative *tebe-* and discontinuative *nebe-*. Building on previous cognitive examinations of the English progressive and Slavic prefixation and incorporating the Ontological Semantic inventory of modalities, the prefix is approached in light of the Figure/Ground distinction as well as the notion of epistemicity. The article focuses on the relationship holding between the prefix and modality-shaded meanings.

Keywords: *Figure/Ground, cognitive semantics, epistemic, prefixes, superlexical, Lithuanian*

Introduction

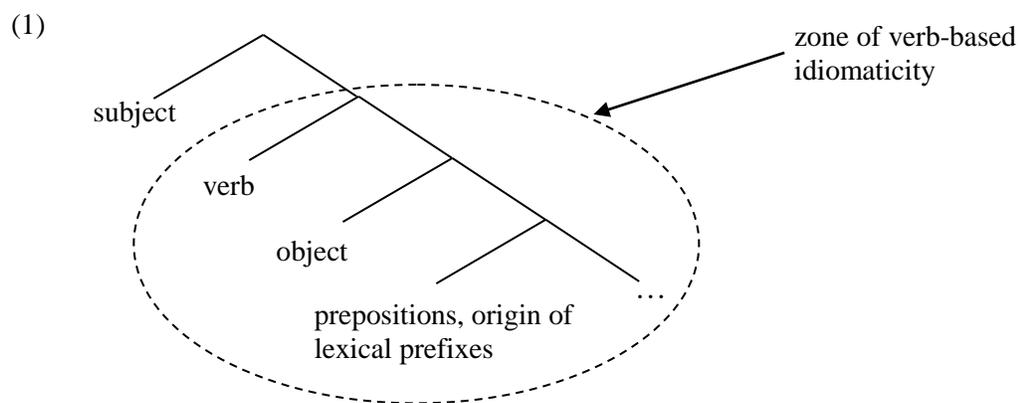
The present article seeks to examine the Lithuanian prefix *be-* from a cognitive perspective while taking into account generative syntactic findings. The core of the latter approach is an idea that all language elements are positioned in a hierarchical way, which is schematically represented as a tree. At the level of prefixation, the major distinction is made between superlexical (higher, or outer) prefixes and lexical (lower, or inner) prefixes. Superlexical prefixes have compositional meanings and can attach on top of lexical prefixes. Lexical prefixes can have both literal and idiomatic meanings, to the effect that a verb may have several superlexical, but only one lexical prefix. These features have led Svenonius (2004) to associate Russian lexical prefixes with “Figure” properties in the sense of the Figure and Ground distinction that is widely used in cognitive linguistics as well as psychology (see e.g. Evans & Green 2006), and Korostenskiene (2015) has shown that the same approach can be applied to Lithuanian prefixes.

The Lithuanian *be-* is a superlexical prefix, that is, one characterised by adjunctival properties and compositional meaning. *Be-* appears in a number of constructions, most notably, with continuative, avertive, or modality-shaded readings (Arkadiev 2011, Korostenskiene 2017). While there is ample cognitive and generative syntactic research on prefixation in Slavic (e.g. LeBlanc 2010, Janda & Lyashevskaja 2013, Nessel & Janda 2010, Gehrke 2008, Tolskaya 2015; Babko-Malaya 2003, Svenonius 2004, Romanova 2004), and spatial prepositions in English (Zwarts 2005, Tyler & Evans 2007, Talmy 2007), relevant explorations in Lithuanian have been very limited (e.g. Šeškausienė & Žilinskaitė-

Šinkūnienė 2015 for a cognitive approach; Korostenskiene 2015, 2017 for a generative perspective), with the prefix *be-* largely excluded from semantic explorations even in traditional approaches (Arkadiev 2011). Taking syntactic findings as a background, the present article seeks to develop a cognitive approach to *be-*, drawing on the notions of Figure/Ground (Talmy 1978, 2000, Thiering 2016), previous cognitive research on spatial prepositions (e.g. Tyler & Evans 2003) and Slavic lexical prefixes, and the progressive (De Wit & Brisard 2014, Hartmann 2016, Langacker 1987, 2008, 2011).

Lexical prefixes as FIGURE

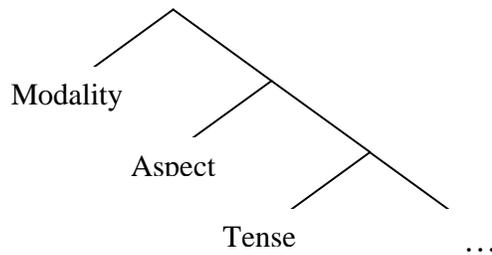
Lithuanian and Russian aspectual systems have two shared properties relevant for the discussion below: as in Russian (Janda 2013, Svenonius 2004), aspectual information in Lithuanian may be conveyed by both prefixes and suffixes, with prefixes presenting a heterogeneous class characterised by a set of different properties. Following Marantz’s (1984) view of verbal idiomatic constructions as systematically deriving from the verb-object relationship, the latter positioned below the verb on a syntactic tree), Svenonius (2004) has shown for Slavic (and Korostenskiene (2017) for Baltic) that lexical (“lower”) prefixes originate below the verb as prepositions, which is taken to account for their ability to acquire idiosyncratic meanings. By moving to the prefixal position, they get a resultative reading. A generative approach to idiomaticity is thus illustrated below:



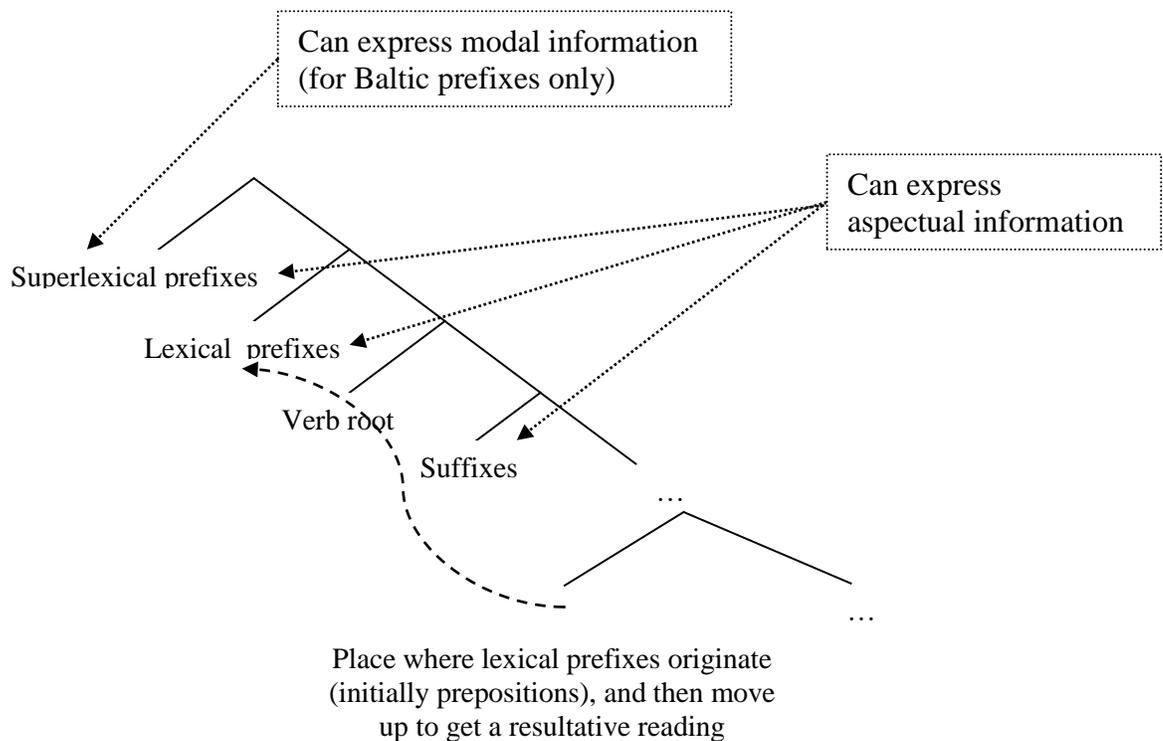
Meanwhile superlexical (“higher”) prefixes are characterized by compositional and predictable meanings and are seen as possessing adjunctival properties, hence able to attach to already (lexically-) prefixed verbs. In Lithuanian, Korostenskiene (2017) classifies *be-*, alongside two other prefixes, restrictive/permissive *te-*, negative *ne-* and separable compounds *tebe-* and *nebe-*, as superlexicals, which is largely in line with the traditional view (e.g. Ambrazas 2006, Ulvydas 1971). However, since from the syntactic viewpoint, superlexical prefixes have different sources of originating, or building upon the verb, than lexical prefixes, and due to the fact that *be-* can combine with any verb and contribute a compositional meaning, we argue here that the application of Talmy’s (1978, 2000) Figure-Ground distinction be correspondingly re-examined. We hypothesise that, being of a different nature, superlexical prefixes may manifest a different type of behavior. This idea is stipulated by Korostenskiene’s (2017) analysis of the aspectual *be-* as placed on the syntactic tree in the aspectual projection following Modality, both Aspect and Modality characterized by clausal, rather than purely verbal, features; consequently, the overall structure of the Lithuanian verb is regarded as morphosyntactic rather than purely morphological.

These background data are illustrated on two simplified generative syntactic trees below: (2a) shows the hierarchical organization of information within a clause; (2b) details the prefix-verb interaction.

(2) a.



b.



Before we consider how the generative facts can contribute to a cognitive approach to the superlexical prefix *be-*, let us have a brief look at the insights of constructions *be-* appears in.

Properties of *be-*

The earliest written usage of the prefix *be-* dates back to the 16th century, *be-* occurring primarily with stative verbs (Ostrowski 2011). The two compound prefixes *tebe-* and *nebe-* are of later origin, replacing in the finite forms the continuative use of *be-* in the 19th century (Ostrowski 2016). In its current uses, *te-* alone forms imperative and restrictive constructions, and hence is analysed as an imperative and, more

recently, as a restrictive/missive prefix (Arkadiev 2010 and references there). The compounds *tebe-* and *nebe-* are separable from the verb in elliptical constructions and contribute respectively a continuative and discontinued, or rather, ‘Negative Continuative’ (Arkadiev 2011: 42) meaning, analogous to German *nicht mehr* (Ostrowski 2016).

The following account of main uses of *be-* largely draws on Arkadiev (2011: 42-47) and will be used as a starting point for the analysis proposed here.

In its aspectual uses, the prefix *be-* participates in a number of constructions:

1) *Be-* is used to form and enhance the continuative meaning in non-finite forms in Lithuanian. Interestingly, *be-* obligatorily appears for morphological purposes in the so-called reflexive-middle verb forms, preceding the marker *si*, which cannot appear word-initially, e.g.

(3) a. Steng-ia-nt-is / be-si-steng-iant-is
 seek-PRS-PA-SI-NOM.SG.M / CNT- seek-PRS-PA-SI-NOM.SG.M
 ‘trying, doing their best’

b. *steng-ia-nči-o-si / be-si-steng-ia-nči-o
 *seek-PRS-PA-GEN.SG.M.-SI / CNT-SI- seek-PRS-PA-GEN.SG.M /
 ‘of trying, doing one’s best’,

2) *Be-* conveys ‘progressive’ or continuative meaning. As mentioned before, *be-* does so when used in non-finite forms without *te-/ne-* and in both finite and non-finite forms when appearing in the compound prefixes *tebe-* and *nebe-*.

3) *Be-* is used in a subordinate construction with the obligatorily past-tensed copular *būti* ‘be’ and a present participle with *be-* (*buvo* ‘be’ + *be-PA*) to create what Arkadiev (2011) subsumes under the Avertive meaning, i.e., the expression of unfulfilled intention, while acknowledging that the term is a little imprecise. Our discussion below will invite a slightly a broader look on the construction. The following example is from the *English-Lithuanian Parallel Corpus of the Contemporary Lithuanian Language* (ELPC, www.donelaitis.vdu.lt):

(4) **Buvo be-ein-ant-i,** bet Koler-is ją su-laik-ė.
 Be-3.PST CNT-go-PA-3.F.NOM but Kohler-M.SG.NOM she-ACC PREF-
 hold-3.PST
 ‘She turned to go, but Kohler cut her off.’

4) There are also two ‘modal’ uses of *be-*, which can be summarized as follows: a) when used with finite verb forms, *be-* can convey a meaning of low probability or degree; and b) *be-* can also be appear in ‘generic’ constructions, combining with clauses containing *wh*-words. The relevant examples from the ELPC are presented below as (5 a-b) respectively:

(5) a. ...partij-oje jau ne-be-daug **be-buv-o** žmon-ių...
 party-F.SG.LOC already NEG-CNT-many CNT-be-3.PST people-PL.GEN

‘In the [political-JK] party itself there were not many people left...’

b. Apačioje, kur **be-pa-žvelg-ė**, plytėjo miesto šviesos.
Bottom-F.SG.LOC where CNT-PREF-look-3.PST extend-3.PST city- M.SG.GEN
lights-F.PL.NOM

‘The city lights beneath them spread out in all directions.’

The separability of prefixal complexes and presence of the potentiality reading in the absence of the restrictive *te-* as illustrated in the examples above suggests that there holds a certain relationship between *be-* and “higher” prefixes. But what is it? Below we will briefly consider the prefix *be-* in light of the Tense-Aspect-Mood category (TAM).

***Be-* as part of the TAM category**

Given its syntactic placement on the tree and the range of meanings, in particular, the prevalence and unambiguous meanings of *te+be+V* and *ne+be+V* constructions, as well as the ability to form *tebe-/nebe-* complexes attaching not only to verbs, but also to other parts of speech, *be-* invites a consideration of whether it may be viewed as part of the Tense-Aspect-Mood (TAM) category. In cognitive approaches, modality is usually examined in light of modal verbs (DeWit & Bresard 2014; Hacquard 2006, Langacker 2011, Declerck 2011, Boogaart & Trnavac 2011). In this study, however, analysis of modality will only be confined to its manifestations at the prefixal level.

While fairly recent, the discussion of TAM has already been tackled as a whole (e.g. Janda 2015), while the meanings of proximativity and avertivity have been a subject of high interest due to their isolation as grams in a number of languages (e.g. Kuteva 1998, 2001, Erelt 2009 for Estonian, and references there; Arkadiev 2011, cf. Nedjalkov 1998). Due to space constraints, we will only summarize the relationship between proximativity and avertivity following Erelt (2009: 180): both can be viewed as the respectively non-marked and marked manifestations of the same category *prospective*, referring to “imminence of the pre-phase of a situation”. The avertive is confined to past constructions and mandatorily involves counterfactuality, hence a negative outcome against one’s will is part of its meaning.

Modality considerations

The discussion of *be-* so far has been intricately intertwined with modal shades of meaning expressed, in particular, through restrictivity, negation, permission, and volition, which all construe the speaker’s /conceptualiser’s viewpoint on reality. It therefore seems natural that a semantic account of *be-* must be constructed so as to duly credit the modal meanings as/when they become manifest.

Taking on the idea that a computational model both simulates the understanding of human language and decomposes it in an ordered way (Holmqvist 1999: 154-157), and having shown that *be-* often appears in constructions conveying a certain meaning of modality, we will adopt the inventory of modalities as proposed by Nirenburg & Raskin (2004) in their Ontological Semantics (OS) framework. Developed specifically for machine applications, OS is argued to be 1) purely linguistic; 2) encoding fine-grained meaning distinctions, such as attitudes of the speaker, as part of ontological text meaning representation. The category of modality is taken broadly, subsuming all instances of the viewer’s standpoint, e.g., expectations, emphases, and is divided into seven modality types, each supplied with a value within the interval from 0 (for negative outcomes, e.g. failures) to 1 (for positive, fully implemented outcomes), as well as values “more than” and “less than” marked respectively by > and < (particular values to be decided upon individually by an OS compiler). The modalities thus all express a certain degree of a particular modal meaning and are as follows:

| Modality type | Concept coded |
|---------------|---------------------------------------|
| Epistemic | Certainty (1) / Uncertainty (0) |
| Epiteuctic | Success (1) / Failure (0) |
| Deontic | Obligation (1) / Free choice (0) |
| Volitive | Desirability (1) / Undesirability (0) |
| Potential | Ability (1) / Inability (0) |
| Evaluative | Attitude: good (1) / bad (0) |
| Saliency | Important (1) / Unimportant (0) |

Table 1. Inventory of modalities in Ontological Semantics.

Remember now that we have identified two uses of *be-* conveying restrictive meanings in Lithuanian. One type has the “narrow” scope and focuses on a particular situation implied to be the only one or one of the very few available. The other type has generic interpretation. The two uses were illustrated in examples 5 (a-b) and are repeated for convenience below as (6 a-b):

(6) a. ...partij-oje jau ne-be-daug **be-buv-o** žmon-ių...

party-F.SG.LOC already NEG-CNT-many CNT-be-3.PST people-PL.GEN

‘In the [political-JK] party itself there were not many people left...’

b. Apačioje, kur **be-pa-žvelg-ė,** plytėjo miesto šviesos.

Bottom-F.SG.LOC where CNT-PREF-look-3.PST extend-3.PST city- M.SG.GEN
lights-F.PL.NOM

‘The city lights beneath them spread out in all directions.’

In these cases, the meaning the *be-*containing verb acquires is stipulated by the construction it appears in: the presence of a negative or a restrictive word in the former case and a *wh*-word in the latter. Native informants interpret the presence of *be-* in both uses as enhancing the factuality of the relevant verb. This would imply that both constructions can be analysed as possessing epistemic modality with value (1). However, how can we mark the extent to which (1) applies, viz. from sole, or nearly sole, manifestation (as in 6a) to universal, or generic, manifestation (as in 6b)?

While factuality is rendered via epistemicity in OS, it is not quite possible to mark the extent of restrictivity which holds a valid presence in these two uses. One way to account for that could be through the saliency modality, already available in the OS, but as it is primarily reserved for meanings of relevance and importance, we will not resort to it here. Rather, to fully credit the difference and identify (the extent of) restrictivity as an inherent feature of epistemicity, we will supplement the ontological epistemic modality with two logic symbols, uniqueness quantification ($\exists!$) and universal quantification (\forall) (cf. Kratzer 1991):

(7) $\exists!$ x: P(x) for *be-* used in the “narrow” scope
 \forall x: P(x) for *be-* used generically

On this view, cases with the restrictive use (as in 6a) will be analysed as *Epistemic I* $\exists!$, and cases with the generic use (as in 6b) as *Epistemic I* \forall .

Adding these two features to the modality inventory will enable us to outline a homogenous modality-based approach to the diverse uses of *be-*. A more thorough investigation requires a study of its own.

Materials and methods

While the uses of *be-* have already been described in the relevant literature, we will explore its manifestations specifically in light of ontological modalities, using a corpus of a manageable size, the ELPC. The Corpus comprises a total of 71795 sentences (92 texts) from English original works and their official translations into Lithuanian. For the purposes of the study, all verbal forms containing *be-* as their aspectual prefix were selected. These instances can be assumed to illustrate the full “meaning potential” (Alwood 1999: 2) of *be-*. Also, we can assume from a cognitive-linguistic point of view that *be-* captures “structural generalizations, representing how the world is thought to work” (Langacker 2001: 64) and that these generalizations are evoked during the translation process. Consequently, for each *be-*-containing instance in the Lithuanian translation, we looked for a rationale in the source language, English. For uniformity of approach, the compound forms *tebe-* and *nebe-* were not included, assuming, following standard grammatical accounts, that they convey unambiguously the meaning of a continuative or discontinued action respectively, which can be coded through epiteuctic modality with values (1) and (0).

In the course of data collection, 537 occurrences of *be-* as the initial aspectual prefix were collected following the method of entire selection. The instances were taken with the maximum admissible context. As the corpus is not annotated, manual processing was applied at all stages. After discarding 19 sentences with the initial *be-* being part of the root, 518 sentences with the prefix *be-* on the verb were subject to further classification based on the construction in which *be-* was used and the meaning it conveyed.

The results are summarized in the table below. Each construction is described in terms of formal components, the overall meaning contributed, the ontological modality identified as relevant for the semantic description of *be-*, with the most saliently expressed modality (that is, the type of modality which is believed to be prioritized by the speaker, given the particular *be-*-containing structure used) marked in bold, and the numeric data in percentages accompanied with the actual number of occurrences. Where the particular form allows variation, e.g. the restrictive use of *be-* with the prefix attaching to both finite and non-finite forms, the component values as well as the sub-total value of the relevant form are provided.

One small note should be added: since negative forms are not included into analysis (where *be-* would be part of the negative compound *nebe-*), all verbs containing *be-* refer to some degree of success, which is why the epiteuctic modality is used in rendering the semantics of all verbs containing *be-*.

| | Form | Meaning | Ontological Modality | % / No. of instances |
|----|-----------------------------|---|--|---|
| 1. | Be+non-finite | a) Factual continuative | Epistemic 1 Epiteuctic 0.4<1 Potential >0.4 Saliency >0.2 | 84.3% / 437 |
| | | b) Factual continuative, proximative reading | | 0.6 % / 3 |
| | | | | Sub-total: 84.9 / 440 |
| 2. | Be+ finite | Restrictive, “narrow” scope, degrees of unique quantification | Epistemic 1 ∃ (!) Epiteuctic 1 | 6.0 % / 31 finite 0.6 % / 3 infinitive Sub-total: 6.6 % / 34 |
| 3. | WH- (tik ‘only’) be+ | Restrictive, generic, universal quantification | Epistemic 1 ∇ Epiteuctic 1 | |

| | | | | |
|----|--------------------------------------|--|---|---|
| | finite | | Potential 1 | 2.5 % / 13 |
| | | | | Sub-total: 2.5 % / 13 |
| 4. | BŪTI + be-aš Be + CNT-v-PA | Prospective: Imminence of a situation with the possibility of a counterfactual resolution, resulting in avertive and proximative uses within the entire proposition, but always proximative at the level of one clause | Epistemic 1 Epiteuctic <0.4 Volitive 1 Potential >0.4 | 4.0 % / 21 avertive + 1.9 % / 10 proximative |
| | | | | Sub-total: 5.9 % / 31 |

Table 2. Meanings of bare *be-* as used in the ELPC.

Brief comments are given below.

- *Factual continuative use*

This is the largest group represented by examples referring to an ongoing action which is incomplete; the situation is construed so that the verb form containing the prefix *be-* emphasizes the action as unfolding and developing (Lina Bikeliene, p.c.). Hence it may be interpreted as foregrounding the event and, consequently, possessing a higher degree of specificity (Thiering 2011) relative to the backgrounded event expressed through the finite form and serving as a reference point. To account for the foregrounding function of non-finite forms with *be-*, as opposed to those without *be-*, a positive value of saliency modality is provided. In addition, three analytical factual continuative forms were found, used specifically to foreground the initial (1 form) and final phase (2 forms) of the process expressed by the verb, following the construction *be-phase verb + lexical verb*. The example below illustrates the point:

- (8) ...jis brovėsi pro susipynusius krūmokšnius, *be-baigi-anč-ius* *užgožti* uolyną.

CNT-finish-PA-M.PL.ACC grow over-INF

‘...he was battling with the complex undergrowth that was already engulfing the scar.’

- *Restrictive use*

As stated above, the values for the epistemic modality were additionally supplemented with two for narrow and generic meaning, Epistemic 1 \exists (!) and Epistemic 1 \forall . While the latter pattern has no variation, the narrow use was usually evoked when a lexical item with the restrictive meaning or a meaning of difficulty was located in the same clause in the source language, such as *not many, only, battled to keep up, all one has to do is..., just, is left wondering, but little, only just, hardly*. Notably, *be-* is void of any meaning of continuity in these forms.

- *Avertive use*

Data from the ELPC suggest that past constructions with the copula and *be+PA* be more aptly viewed as prospective rather than avertive: the clause containing the counterfactual information is not always provided: its presence only depends on the meaning conveyed by the proposition, to the effect that there may be purely proximative meanings, e.g.:

- (9) Šartranas tai jau **buvo** **be-dar-ąs.**
 Chartrand-M.SG.NOM this already be-3.PST CNT-do-M.SG.PA
 ‘Chartrand was already doing it.’

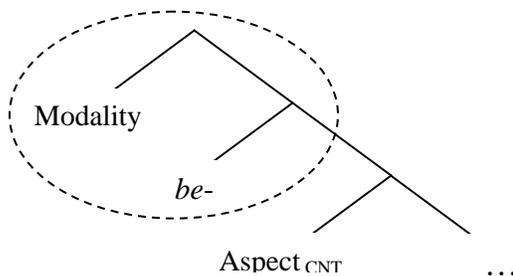
This idea is additionally stipulated by the fact that avertive constructions are confined to the past; in the corpus, however, we were able to identify a single non-past use of the *copula +be-PA* construction. My native speaker informants have confirmed the availability of this construction in future contexts, too. English original verb collocations translated via the proximative use of *be-* include the following: *turned to run back, was already doing, turned to go, was just leaving, wanted to give up, nearly got up, had only just begun, was going to say, was already breaking forth, until he was leaving, had half a mind to demand, was about to cry, is about to expire, began to pull out, rolled the body, preparing to descend.*

These findings suggest that *be-* is closely related to modality: degrees of epiteutic when used in in factual non-finite forms, volitive in prospective uses, and restrictive when used in finite verbs. But how? We believe that reference to (and hence relevance of) modal shades of meaning expresses the view of the speaker and the speaker’s assessment of the proposition in light of the conceived reality, and therefore, can be interpreted as a manifestation of Langacker’s “epistemic certainty” or “epistemic judgment” (2008: 301). Extending this view to include continuative and discontinuative forms *tebe-/nebe-* whose left-most elements express modality, we arrive at a situation in which *be-* and the combinations of *te-*, *ne-*, and *be-* can be interpreted as constructing the speaker’s epistemic model, a full account of the latter to include the temporal perspective.

What we also see is that *be-* is used to form constructions in which the "power balance" varies between the epistemic and epiteutic modalities. Essentially *be-* marks a spectrum of manifestations of the epistemic modality: its positive and zero values, either represented through time (for prefixal complexes), or characterizing the extent of its applicability (manifest through restrictive uses of *be-* in finite forms), or foregrounding its developmental stage (in *be-* + non-finite forms). Notably, in this latter use, while *be-* serves the foregrounding function, its presence is *optional*, which suggests that *be-* is located *above* the aspectual projection responsible for forming non-finite forms. The separability of compound prefixes supports this perspective.

On this view, *be-* cannot be regarded as a merely continuative prefix positioned within the aspectual projection responsible for the construction of non-finite verb forms. We have shown that *be-* occupies a position that may be as relevant for continuative aspectual uses, as for modal ones. The most natural solution would then be to position *be-* in between the two projections and argue that *be-* should be associated not so much with the verb it attaches to, but rather the particular modality it “substantiates”. This is illustrated below in (10):

(10)



While the exact syntactic status of *be-* merits a study of its own, a few observations may be made regarding its function from a cognitive perspective. Given its performance, we suggest that *be-* provides the ground for modality, which serves as the figure, but how this grounding manifests itself depends on whether modality markers are expressed overtly. Hence when modality is expressed morphologically as a prefix or lexically as a free-standing word, *be-* provides the ground for the physically manifest modality item. When there are no overt modality markers, as in the case with non-finite forms with epistemic modality set to value 1, the function of *be-* as the ground for the (epistemic) modality is obscured but is still deducible, given the foregrounding effect *be-* conveys on the proposition. In avertive uses, the situation is complicated by the fact that it is the clause-level of the figure-ground distinction that becomes foregrounded (similarly to how counterfactuality is taken to emphasize incongruity in Grady, Oakley & Coulson's (2007) (cf. Talmy (1978)), so that the clause referring to the outcome serves as the ground for the entire situation in the complex sentence. But regarded within the domain of a single *be-*-containing clause, *be-* places the event-object relative to the degree of its manifestation, hence marks the pre-stage of the epistemic "event-developmental" modality, accompanied by foregrounded features of volition and unrealized potential, and ultimately provides the ground for epistemicity.

Conclusion

Taking into consideration the syntactic peculiarities of the Lithuanian superlexical prefix *be-*, the present study initiates a cognitive approach to its semantics. *Be-* is shown to be part of the TAM category, maintaining close relationship with modality. Employing the inventory of modalities of the Ontological Semantics framework and adding two more properties to the meaning elements of epistemic modality suggested in OS, viz. unique and universal quantification, *be-* is argued to provide the ground for different manifestations of epistemic values, which can be expressed both overtly or covertly and are often accompanied by secondary modal semantic meanings of success, potential, and volition. In purely continuative uses, which is the most frequently used construction, the presence of *be-* is argued to mark the saliency of the epistemic value of the progressiveness expressed by the non-finite verb form. Consequently the proposed approach has implications of two kinds: first, it outlines a unified account of the semantics of *be-* that can help refine its placement on the syntactic tree and, second, it lays out generative syntactic findings that can be taken into account in further cognitive explorations of prefixes.

Abbreviations

ACC – Accusative, CNT – continuative, F – feminine, FUT – future, GEN – Genitive, M – masculine, NOM – Nominative, PA – present participle, PL – plural, PREF – lexical prefix, PRS – present, PST – past, SI - reflexive-middle marker, SG – singular, v - verb

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