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Lexical vs. Nominal prefixes and Their Meaning Domains

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Abstract

This study contrasts two types of prefixes in Lithuanian (a Baltic language), the lexical prefix and the nominal prefix. Despite being homophonous, I demonstrate that these prefixes are two distinct elements. There is a tradition in the literature to analyze lexical prefixes as part of a VP complement (Babko-Malaya 2003, Dimitrova-Vulchanova 1999, Svenonius 2004, *ia.*) since, despite being perfective, they also license an additional argument. Nevertheless, the data from Lithuanian show that the lexical prefix lacks phrasal properties. Instead, I propose that the lexical prefix is a morphological element, which is merged directly with a verbalized root (in line with Basilio 2008). In contrast, I show that the nominal prefix is a category-defining head *n* since it operates on the roots meaning space (Marantz 2001; Arad 2005) and can assign gender to a noun (Kramer 2016). I further gave evidence for this analysis showing that it correctly predicts polysemy resolution effects (Marantz 2013).

Lexical vs. Nominal prefixes and Their Meaning Domains*

Milena Šereikaitė

1 Introduction

This study contrasts two types of prefixes in Lithuanian (a Baltic language), the lexical prefix *pa-* in (1) and the nominal prefix *pa-* in (2). Despite being homophonous, I demonstrate that these prefixes are two distinct elements. The prefix *pa-* in (1), glossed here as PRV, belongs to the group of so-called lexical prefixes attested in Slavic languages (Babko-Malaya 1999; Svenonius 2004, 2008; ia.) that can add a perfective meaning to the verb and affect its argument structure in various ways. On the other hand, the nominal prefix *pa-*, glossed here as NOMP, is a non-perfective prefix that attaches to (non)bound roots to form nouns like (2a), which then can be verbalized (2b).¹

(1) pa-slėp-ti	(2) a. pa-sak-a	b. pa-sak-o-ti
PRV-hide-INF	NOMP-root-NOM.F.SG	NOMP-root-v-INF
‘to hide, to have hidden’	‘a tale’	‘to narrate (about)’

I provide a morphosyntactic analysis for these two classes of prefixes arguing that both prefixes differ from each other in terms of their status and a structural position. There is a tradition in the literature to analyze lexical prefixes as part of a VP complement (Babko-Malaya 2003; Dimitrova-Vulchanova 1999; Svenonius 2004, 2008 ia.) since, despite being perfective, they also often license an additional argument. Nevertheless, the data from Lithuanian show that a lexical prefix lacks phrasal properties. Instead, I propose that the lexical prefix is a morphological element, which is merged directly with a verbalized root (in line with Basilico 2008). In contrast, I show that the nominal prefix is a category-defining head *n* since it operates on the root’s meaning space (Marantz 2001; Arad 2003, 2005) and can assign gender to a noun (Kramer 2016). It is demonstrated that this analysis of two types of prefixes makes correct predictions for polysemy resolution (Marantz 2013). The support for it comes from cases where the lexical prefix is stacked on noun-derived verbs with the nominal prefix. I argue that the meaning of a root that is excluded when a nominal prefix is merged is not available at an outer phase when a noun is verbalized and merged with the lexical prefix. Lastly, the two prefixes discussed here contribute to the typology of superlexical vs. lexical prefixes (Svenonius 2004, 2008) in that it introduces the third layer of prefixes, namely nominal prefixes, which are identical in their form with lexical prefixes.

The paper is laid out as follows. Section 2 provides typological background on prefixes that can be attached to verbs. Section 3 presents main differences between nominal and lexical prefixes. Section 4 provides analysis for each group of prefixes. Section 5 looks at meaning domains of both prefixes. Section 6 concludes.

2 Typological Background

This section sketches the formal properties of Lithuanian prefixes that attach to verbs. A number of studies on Slavic verbal morphology distinguish two groups of prefixes, namely superlexical prefixes and lexical prefixes (Babko-Malaya 1999; Di Sciullo and Slabakova 2005; Romanova 2004, 2006; Svenonius 2004, 2008, ia.). Lexical prefixes are perfective *vP* internal elements that have different effects on argument structure of a verb and whose meaning can vary from purely perfective to idiomatic. In contrast, superlexical prefixes originate above a *vP*, do not affect the argument structure

*I am very grateful to David Embick for comments and feedback. Many thanks to our morphology reading group, F-MART, for feedback. I also thank Luke Adamson, Ava Irani and Peter Arkadiev for their suggestions, and the audience at GLAC22, WCCFL34, PLC41 and the Word and the Morpheme workshop 2016 at Humboldt Universität zu Berlin.

¹I gloss bound roots as *root*.

and have a fixed aspectual meaning. I demonstrate that Lithuanian has both layers of prefixes, superlexical and lexical. Additionally, the third layer of prefixes, namely nominal prefixes, is introduced.

Table 1 gives a template of prefixes that can be merged with a verb. Superlexical prefixes like *te-* or *be-* are the outermost prefixes and occupy the highest structural position. They can be stacked on the top of lexical prefixes like *pa-*. Verbs can also be derived out of prefixed nominals. Nominal prefixes, which overlap with lexical prefixes in their form, occupy the closest position to the root within a denominal verb. Each group of prefixes is characterized below.²

Superlexical Prefixes			Lexical Prefixes		Nominal Prefixes	
Permissive, Restrictive, Affirmative	Negation	Aspectual meaning	Aktionsart	Reflexive		Root
<i>te-</i>	<i>ne-</i>	<i>be-</i>	<i>ap-, at-, i-, iš-, nu-, pa-, par-, per-, pra-, pri-, su-, už-</i>	<i>-si-</i>	<i>ap-, at-, i-, iš-, nuo-, pa-, par-, per-, pra-, prie-, su-, už-</i>	Root

Table 1: Lithuanian prefixes (adapted from Arkadiev (2012:2))

Nominal prefixes are morphological elements that attach to nominals. They can be attached either to bound roots e.g., $\sqrt{\text{sak}}$ or $\sqrt{\text{gaul}}$ as in (3), or non-bound roots e.g., $\sqrt{\text{taik}}$ - ‘peace’ as in (4), to form nouns. In both cases (3-4), nominal prefixes assign a certain meaning to a verb that is not predictable from the prefix itself or the root (see also sub-section 4.1 for more on this function). It is possible to form verbs out of prefixed nouns by adding a verbalizer like *-o* or *-au* as in (5).

- | | |
|---|--|
| (3) a. <i>*(pa)-sak-a</i>
NOMP-root-NOM.F.SG
‘a tale’ | b. <i>*(už)-gaul-ė</i>
NOMP-root-NOM.F.SG
‘insult’ (n) |
| (4) a. <i>taik-a</i>
peace-NOM.F.SG
‘peace’ (n) | b. <i>pa-taik-a</i>
NOM-peace-NOM.F.SG
‘toady’(n) |
| (5) a. <i>pa-sak-o-ti</i>
NOMP-root-v-INF
‘to narrated (about)’ | b. <i>pa-taik-au-ti</i>
NOMP-peace-v-INF
‘to toady (to)’ |

Lexical prefixes usually perfectivize a verb (6-7). They originate outside nominal prefixes: lexical prefixes can be stacked on noun-derived verbs with the nominal prefix, and by doing so add a perfective (8a) or temporal meaning (8b) to a predicate. The facts from stacking suggest that both prefixes occupy different structural positions.

- | | |
|--|---|
| (6) a. <i>slėp-ti</i>
hide-INF
‘to hide’ | b. <i>pa-slėp-ti</i>
PRV-hide-INF
‘to hide, to have hidden’ |
| (7) a. <i>raš-y-ti</i>
write-v-INF
‘to write’ | b. <i>pa-raš-y-ti</i>
PRV-write-v-INF
‘to write, to have written’ |
| (8) a. <i>pa-pa-sak-o-ti</i>
PRV-NOMP-sak-v-INF
‘to narrate (about), to have narrated (about)’ | b. <i>pa-už-darb-iau-ti</i>
PRV-NOMP-work-v-INF
‘to earn money from time to time’ |

²The diagnostics used here to distinguish between lexical and superlexical prefixes are taken from Svenonius (2004; 2008).

Lexical prefixes show a complex semantic and morphosyntactic interaction with a verb, which signals their tight relation with argument structure. While some prefix-verb combinations are transparent (6-7), some of them can be somewhat or completely opaque. For example, a number of prefixes have prepositional uses by adding a spatial sense to a verb (9) or an idiomatic meaning (10).

- | | | | |
|------|--|--|---|
| (9) | a. pa-bėg-ti
PRV-run-INF
'to run away' | b. nu-bėg-ti
PRV-run-INF
'to run down/for' | c. iš-bėg-ti
PRV-run-INF
'to run out' |
| (10) | a. pa-dėt-i
PRV-put-INF
'to put down', 'to help' | b. iš-tekė-ti
PRV-flow-INF
'to flow out', 'to marry' (for woman) | |

These verbal prefixes also change the argument structure of a verb by making an optional argument obligatory. For instance, when the prefix *iš-* is added to the intransitive verb *cry*, the verb becomes transitive (11). The presence of the prefix also makes an optional argument obligatory as in (12).

- | | | |
|------|---|--|
| (11) | a. Aš verkiau.
I.NOM cry.PST.1.SG
'I was crying.' | b. Aš iš-verkiau *(visas ašaras).
I.NOM PRV-cry.PST.1.SG *(all tears.ACC)
'I cried out all tears.' |
| (12) | a. Aš rašiau (laišką)
I.NOM write.PST.1.SG letter.ACC
'I was writing (a letter).' | b. Aš pa-rašiau *(laišką)
I.NOM PRV-write.PST.1.SG letter.ACC
'I wrote/have written a letter.' |

Unlike lexical prefixes, superlexical prefixes have a fixed non-idiosyncratic meaning: *te-* often adds a permissive reading (13) and *be-* expresses a progressive meaning (14).³ These prefixes do not license additional arguments as exemplified in (15) where the object of *write* retains its optionality.

- | | |
|------|---|
| (13) | Tas kuris slep-ia-si – te-si-slep-ia.
That.NOM which.NOM hide-PRS.3-RFL TE-REF-hide-PRS.3
'Let the one, who is hiding, hide.' |
| (14) | Be-si-slėpda-m-a spintoje, Marija rado skėtį.
BE-RFL-hide-PPRT-NOM.F.SG wardrobe.LOC, Marija.NOM find.PST.3 umbrella.ACC
'While hiding in the wardrobe, Marija found an umbrella' |
| (15) | Jis vis dar te-be-rašo (laišką).
He.NOM still TE-BE-write.PRS.1.SG letter.ACC.
'He is still in a process of writing (a letter).' |

Lastly, superlexical prefixes originate outside lexical or nominal prefixes as illustrated by stacking. It is grammatical to stack superlexical prefixes on the top of verbs with nominal (16a) or lexical (16b) prefixes, or both of them (17).

- | | | |
|------|--|--|
| (16) | a. te-ne-be- pa -sak-o-ja
TE-NEG-BE-NOMP-root-v-PRS.3
'don't let him/her continue to narrate (about)' | b. ne-be- pa -si-slėp-ė
NEG-BE-PRV-RFL-hide-PST.3
'he/she was not able to hide himself/herself' |
| (17) | te- pa - pa -sak-o-ja
TE-PRV-NOMP-root-v-PRS.3
'let him/her to narrate (about)' | |

³For more on the meanings that these prefixes can have, see Arkadiev (2011; 2012).

Given that lexical prefixes can license an additional argument and contribute to the interpretation of the verb in forming both opaque and transparent meanings, it can be argued that they originate inside *vP* as has been proposed for Slavic lexical prefixes. In addition, the stacking facts from denominal verbs suggest that nominal prefixes structurally originate even closer to the root than lexical prefixes, and thereby they should also be part of the *vP*. On the other hand, superlexical prefixes do not contribute to the meaning of the *vP* in the same way since they do not form an idiomatic meaning with a verb. Additionally, they do not influence the argument structure of a verb. Thereby, these prefixes are structurally higher than lexical and nominal prefixes, most likely originating above the *vP*.

3 Lexical vs. Nominal Prefixes

Nominal prefixes are homophonous with lexical prefixes (e.g., *pa-*). Despite their identical morphology, both classes of prefixes exhibit divergent properties. As shown above, lexical and nominal prefixes originate in distinct positions, recall (8). However, there is a number of other non-structural properties that distinguish between the two. This section fleshes out these properties.

The first difference is stress. Nominal prefixes receive an initial stress in nouns as (18a), which is also often retained in noun-derived verbs as in (18b). In contrast, lexical prefixes usually are not assigned stress and instead the verbalizer is stressed. This is exemplified by the minimal pairs in (19-20) with prefixed nouns and prefixed verbs where both words share the same root, but merge with different prefixes.⁴ A parallel behavior between prefixed nouns and verbs regarding the stress pattern can also be observed in Czech (see Ziková et al. 2012; Caha and Ziková 2016).

- | | | | | |
|------|----|---|----|---|
| (18) | a. | pā-sak-a
NOMP-root-NOM.F.SG
'a tale' | b. | pā-sak-o-ti
NOMP-root-v-INF
'to narrate (about)' |
| (19) | a. | pā-raš-as
NOMP-write-NOM.M.SG
'a signature' | b. | pa-raš-ý-ti
PRV-write-v-INF
'to write, to have written' |
| (20) | a. | pā-stat-as
NOMP-build-NOM.M.SG
'a building' | b. | pa-stat-ý-ti
PRV-build-v-INF
'to build, to have built' |

Secondly, the nominal prefix lacks a perfective meaning which is usually associated with the lexical prefix. In the past tense, the noun-derived verb with the nominal prefix can have a continuous reading and a perfective reading is ruled out (21). On the other hand, verbs with lexical prefixes are not compatible with the continuous reading and can obtain a perfective interpretation (22).⁵

⁴The stress difference between lexical and nominal prefixes does not apply across the board. Some prefixed nouns allow their root to be stressed rather than their prefix as in (i).

- | | | | | |
|-----|----|---|----|---|
| (i) | a. | už-gául-ê
NOMP-root-NOM.F.SG
'insult' (n) | b. | už-gaul-ió-ti
NOMP-root-v-INF
'to insult' |
|-----|----|---|----|---|

⁵One needs to be aware that this test is non-applicable to bi-aspectual verbs. These verbs have a lexical prefix which usually signals a perfective reading. However, despite the presence of this prefix, these verbs can have either perfective or imperfective interpretation as in (i). Thanks to Peter Arkadiev (pc) for bringing this to my attention.

- | | | | | |
|-----|-------------------------|--------------|-------|------------------------------------|
| (i) | Jonas | par-ein-a | namo. | |
| | Jonas.NOM | PRV-go-PRS.3 | home | |
| (i) | 'Jonas is coming home.' | | | (ii) 'Jonas (usually) comes home.' |
- (Arkadiev 2011:74)

- (21) Aš pa-sak-o-jau jai apie savo problemas.
I.NOM NOMP-root-v-PST.1.SG her.DAT about self problems.ACC
(i) 'I was telling her about my problems.' (ii) *'I have told/told her about my problems.'
- (22) Aš pa-slėp-iau skėtį.
I.NOM PRV-hide-PST.1.SG umbrella.ACC
(i) 'I have hidden/hid an umbrella' (ii) *'I was hiding an umbrella.'

Further evidence for the lack of the perfective meaning with verbs that have nominal prefixes comes from their ability to be embedded under certain state verbs like *pradėti* 'start'. Generally, perfective verbs cannot be embedded under these predicates, whereas imperfective verbs can (Borik 2002). Verbs with the nominal prefix can be embedded under *start* as in (23) indicating that they behave like imperfectives. Verbs with the lexical prefix cannot occur with state predicates exhibiting a typical behavior of perfective verbs (24).

- (23) Aš pradėj-au pa-sak-o-ti apie save.
I.NOM start-PST.1.SG NOMP-root-v-INF about myself.
'I started to tell about myself.'
- (24) Aš pradėj-au slėp-ti/*pa-slėp-ti skėtį nuo vaikų.
I.NOM start-PST.1.SG hide-INF/PRV-hide-INF umbrella.ACC from children
'I started to hide an umbrella from children.'

The third difference comes from the distribution of a reflexive clitic *-si-*. In verbs with the nominal prefix, the clitic *-si-* appears as a suffix (25a).⁶ Verbs with a lexical prefix show a different behavior by allowing the clitic to appear as a prefix between the root and the perfective prefix (25b).

- (25) a. pa-(*si)-sak-o-jau-si b. pa-si-slėp-iau-(*si)
NOMP-RFL-root-v-PST.1.SG-RFL PRV-RFL-hide-PST.1.SG
'I was narrating about something by myself.' 'I hid/have hidden myself'

Even though both groups of prefixes look identical in form, they differ in terms of their position, stress, semantic function and placement of the reflexive clitic *-si-*. The next section proposes a formal way of capturing these differences.

4 Analysis

This section offers an analysis for each class of prefixes couched in the framework of Distributive Morphology (DM) (Halle and Marantz 1993; Marantz 1997; Embick 2010; ia.). I argue that the differences between two types of prefixes boil down to both classes not only being base-generated in different positions, but also having a different status within a structure. Specifically, nominal prefixes are cyclic, category defining heads whereas lexical prefixes are non-cyclic elements directly merged with a verbalized root.

Before we start, let us review some basic concepts on what does it mean for an element to be cyclic. In DM, words are considered to be complex units. They consist of at least a root and category

⁶Note that there is some variation regarding the distribution of the reflexive *-si-*. Some speakers allow *-si-* between the nominal prefix and the verb. Our consultants accept (i-a), but judged (i-b) as ungrammatical. The corpus search (www.tekstynas.lt) shows that (ib) is possible at least for some speakers. I thank Peter Arkadijev (pc) for bringing this up to my attention.

- (i) a. pa-žin-au-si b. %pa-si-žin-au
NOMP-root-PST.1.SG-RFL NOMP-RFL-root-PST.1.SG
'I was getting to know smth by myself.' 'I was getting to know smth by myself.'

defining heads, which are *n*, *v*, *a*, etc (Marantz 2001, 2007), that assign a grammatical category. Category defining heads are cyclic: they define phases which, following Chomsky (2000; 2001), send a syntactic structure to the interface. In contrast, non-cyclic elements do not define a phase. In this study, I assume Phase Impenetrability Condition 2 (PIC2) from Chomsky (2001) where a non-cyclic element can see across the next phase head, whereas a phase-head, a cyclic element, cannot.

4.1 Nominal Prefixes

I argue that the nominal prefix is a category defining head *n* that directly merges with a root forming a noun. The following arguments are in favor of this analysis. The first argument comes from gender alternations. Kramer (2015) proposes that a category-defining head *n* has a gender feature that is assigned to a noun. Thus, it can be predicted that if the nominal prefix is *n* head, it should assign a gender to the root it attaches to. This prediction is borne out. The nominal prefix *pa-* can be attached to masculine nouns formed with non-eventive roots denoting things e.g., a mountain as in (26a). When the prefix *pa-* is attached to such nouns, it changes a gender feature of the noun from masculine to feminine as exemplified in (26-28).⁷

- | | | | | |
|------|----|--|----|---|
| (26) | a. | kaln-as
mountain-NOM.M.SG
'a mountain' | b. | pa-kaln-ė
NOMP-mountain-NOM.F.SG
'a foot of a mountain' |
| (27) | a. | lang-as
window-NOM.M.SG
'a window' | b. | pa-lang-ė
NOMP-window-NOM.F.SG
'a windowsill' |
| (28) | a. | stog-as
roof-NOM.M.SG
'a roof' | b. | pa-stog-ė
NOMP-roof-NOM.F.SG
'a garret', 'a shelter' |

Marantz (2001) and Arad (2003; 2005) argue that a root is assigned a meaning once it is merged with a categorizing head. As mentioned in Section 2, nominal prefixes can indeed be combined with bound roots to form nouns as in (29a-29b). The nominal prefix like a categorizing head serves as a pointer to a meaning space available for a root. Naturally, one may wonder whether these prefixes and roots are decomposable to begin with. In other words, why can't we assume that *pa-* and *tais* is just one root e.g., \sqrt{PATAIS} in (29a)? I rule out this possibility because even though \sqrt{TAIS} is bound, it still appears in other words e.g., *tais-y-ti* - 'to fix', *tais-y-kla* - 'a repair shop', *i-tais-as* - 'a device'. The same argumentation can be applied to the example in (29b).

- | | | | | |
|------|----|--|----|---|
| (29) | a. | *(pa)-tais-a
NOMP-root-F.SG
'a correction' | b. | *(pa)-veld-as
NOMP-root-M.SG
'an inheritance' |
|------|----|--|----|---|

⁷The Lithuanian Language Dictionary (lkz.lt) also gives instances with the nominal prefix *pa-* and masculine inflections as in (i)-(iii). Our consultants consider these forms archaic and prefer using feminine forms. Corpus search (www.tekstynas.lt) and google search show that feminine forms are used more productively than masculine. I leave it for further research to investigate a possibility whether the use of masculine form is a phenomenon of language change.

- | | | | |
|-------|--|------|--|
| (i) | pa-kaln-is/-ys
NOMP-mountain-NOM.M.SG/-NOM.M.SG
'a foot of a mountain' | (ii) | pa-lang-is/-ys
NOMP-window-NOM.M.SG/-NOM.M.SG
'a windowsill' |
| (iii) | pa-stog-is/-ys
NOMP-roof-NOM.M.SG/NOM.M.SG
'a garret', 'a shelter' | | |

Further evidence for the nominal prefix being in charge of the meaning of the nominal bound root comes from cases where different nominal prefixes occur with the same bound root yielding different meanings. The bound root \sqrt{GAUL} in (30a) can be merged with nominal prefixes like *už-* or *ap-*, and each of them forms a different meaning with the root (30b-30c). The same observation can be made with \sqrt{PIRK} in (31) with nominal prefixes *iš-* and *į-*.

- | | | | |
|------|-----------------------------|--|---|
| (30) | a. *gaul-è
root-NOM.F.SG | b. už-gaul-è
NOMP-root-NOM.F.SG
'insult' (n) | c. ap-gaul-è
NOMP-root-NOM.F.SG
'deception' (n) |
| (31) | a. *pirk-a
buy-NOM.F.SG | b. iš-pirk-a
NOMP-buy-NOM.F.SG
'ransom' (n) | c. į-pirk-a
NOMP-buy-NOM.F.SG
'bond' (n) |

In a number of cases, merging the prefix with a non-bound root modifies the meaning of the root rather than completely changes it. For example, the prefix *pa-* often has a directional sense, expresses a place under something as in (32).

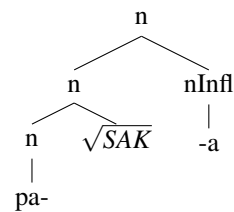
- | | | | |
|------|--|---|--|
| (32) | a. pa-stal-è
NOMP-table-NOM.F.SG
'a place under a table' | b. pa-nag-è
NOMP-nail-NOM.F.SG
'a place under a nail' | c. pa-kakl-è
NOMP-neck-NOM.F.SG
'a place under a neck' |
|------|--|---|--|

However, the prefix can also compose an idiosyncratic meaning which in Marantz (2001) is taken as evidence for a category defining head to be directly attached to the root. The root \sqrt{PEACE} in (33) is assigned completely different meanings with prefixes *pa-* and *į-*. The example in (34) exhibits the same pattern.

- | | | | |
|------|---|---|--|
| (33) | a. taik-a
peace-NOM.F.SG
'peace' | b. pa-taik-a
NOMP-peace-NOM.F.SG
'toady' (n) | c. į-taik-a
NOMP-peace-NOM.F.SG
'persuasion' (n) |
| (34) | a. slaug-a
nursing-NOM.F.SG
'nursing' (n) | b. pa-slaug-a
NOMP-nursing-NOM.F.SG
'a favor' | |

Given that the nominal prefix assigns a meaning to the bound root and changes the gender of a noun, the nominal prefix can be argued to be a category defining head *n* that is merged with the root first as in (35). When the root becomes categorized as a noun, it then merges with nInfl, a nominal inflectional morpheme that encodes number, gender and case.

- (35) pa-sak-a NOMP-ROOT-NOM.F.SG 'a tale'



4.2 Lexical Prefixes

Recall from Section 2 that lexical prefixes originate inside a vP. The fact that these prefixes introduce an object argument and are linked to an event building structure has led a number of researchers propose that at least Slavic lexical prefixes are a part of resultative phrase, with its own arguments, embedded under a VP (Babko-Malaya 2003; Dimitrova-Vulchanova 1999; Svenonius 2004; ia.).

However, this analysis is problematic for the Lithuanian data for a couple of reasons. For example, there is a bunch of unaccusative verbs that occur with the lexical prefix, but their argument structure does not change (36). The prefix does not transitivize the verb *die* suggesting that there is no need to treat the prefix as the complement of a verb at least for these cases.

- (36) a. Jis mirė.
He.NOM die.PST.3
'He died.'
- b. Jis nu-mirė.
He.NOM PRV-die.PST.3
'He died/has died.'

Furthermore, lexical prefixes lack phrasal properties and are always adjacent to a verb. This can be illustrated by comparing it with German particles that have been shown to pattern in many ways like Lithuanian (Šereikaitė 2016) and Slavic (Svenonius 2004 and references therein) lexical prefixes. Nevertheless, German particles are separable and project a full phrase (Zeller 2001; Lüdeling 2001), which is not the case with lexical prefixes⁸. For example, German particles can be topicalized (37), while lexical prefixes cannot (38).⁹

- (37) **An** der Haltestelle stiegen hübsche Frauen ein. **Aus** stiegen nur Männer.
at the bus.stop climbed pretty women in. out climbed only men
'At the bus stop, pretty women got on. Only men got off' (Zeller 2001:89)
- (38) Į autobusą **į**-lipo gražios moterys. ***Iš**- tiktai vyrai lipo.
In bus.ACC PRV-climbed pretty women.NOM PRV only men.NOM climbed
'At the bus stop, pretty women got on. Only men got off'

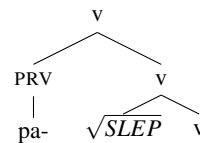
In contrast to German particles (39), Lithuanian prefixes cannot be scrambled as in (40).

- (39) Ich weiß, daß, die Sonne **auf** im Osten und **unter** im Westen geht.
I know that the sun up in.the East and down in.the West goes.
'I know that the sun goes up in the East and down in the West.' (Lüdeling 2001:50)
- (40) *Upė **į**- vakaruose teka ir **iš**- rytuose teka.
River PRV West flows and PRV East flows.
The river flows in the West and out in the East.'

Additionally, German particles can be modified and stranded by gapping, whereas lexical prefixes cannot. If lexical prefixes are parts of a VP complement, they should also pattern in a similar manner to small clauses. However, these properties are not associated with lexical prefixes. Due to space reasons, I am not going to discuss these data here and refer the reader to (Šereikaitė 2016).

The analysis proposed here is along the lines of Basilico (2008). The lack of phrasal properties can be accounted for if we treat the lexical prefix as non-cyclic element that has been directly merged with a verbalized root as in (41). This solves our problem with prefixed unaccusative verbs whose argument structure never changes. Recall that lexical prefixes can also form idiomatic meanings with the verb as in (10a) where the verb *pa-dēt-i* can mean 'to put down' (literal) or 'to help' (non-literal). We can explain the prefix's ability to yield a non-transparent meaning by adopting PIC2 which allows a non-cyclic head to see through (just) the next cyclic head, thus *v* in this case, and be able to form a non-transparent meaning with the root.

- (41) pa-slėp-ti - PRV-hide-INF- 'to have hidden'

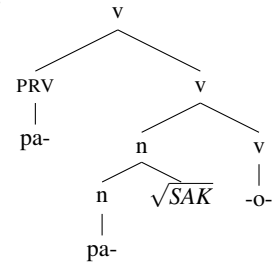


In the noun-derived verb like (42), the root first merges with the nominal prefix, which assigns meaning and category to it, and creates a phase. The nominalized root then merges with the verbalizer *o* creating a verb. I take the verbalizer to be a cyclic head which creates a second phase. The lexical prefix attaches to the verb forming a perfective verb as sketched in (42).

⁸Nevertheless, see Svenonius (2008) arguing that Russian prefixes are phrasal.

⁹The diagnostics used in this section are taken from Svenonius (2008:533-534).

(42) pa-pa-sak-o-ti - PRF-NOMP-root-v-INF - ‘to have narrated (about)’



To summarize, the analysis proposed here makes structural and categorial difference between the two classes of prefixes. The nominal prefix is a category defining head that creates a phase, whereas the lexical prefix is a non-cyclic element. This analysis makes predictions for phasal locality effects like polysemy resolution which I discuss next.

5 Meaning Domains

If the analysis proposed here is correct, then we expect to see some morphological or meaning related effects imposed by phasal constraints of nominal prefixes and verbalizers in denominal verbs. Indeed, effects related to meaning, specifically polysemy resolution, can be observed. As far as the meaning of roots is concerned, it has been proposed that if the meaning of the root has been excluded at the inner phase, it cannot be brought back at the next phase (Marantz 2013, Arad 2003, 2005). Thus, if the nominal prefix is a cyclic head that creates a phase, we should expect to see effects where a particular interpretation that has been ruled out by this prefix is no longer available for the next phase. This prediction is borne out.

Observe that when the root \sqrt{PEACE} is merged with the prefix *pa-*, a new meaning, namely *toady*, is created. This prefix is a cyclic head which creates a phase suggesting that the meaning ‘peace’ should no longer be available for the next phase. This is true for noun-derived verbs. The noun in (43b) can be used to create a verb by adding a verbalizer *au* as in (43c). The verbalizer forms a second phase and the verb itself retains the meaning assigned by the nominal prefix. The meaning available for this verb is ‘toady’ rather than ‘peace’ providing additional evidence for the nominal prefix being a cyclic head. The same meaning restrictions can be observed in (44)

- | | | | |
|------|--|--|--|
| (43) | a. taik-a
peace-NOM.F.SG
peace | b. ‘pa-taik-a’
NOMP-peace-NOM.F.SG
*‘peace’, ‘toady’ | c. pa-taik-au-ti
NOMP-peace-v-INF
*‘peace’, ‘to toady (to)’ |
| (44) | a. gaid-a
note-NOM.F.SG
‘a note’ | b. uŹ-gaid-a
NOMP-note-NOM.F.SG
*‘a note’, ‘a caprice’ | c. uŹ-gaid-au-ti
NOMP-note-v-INF
*‘note’, ‘to be capricious’ |

The meaning assigned by the nominal head is retained when the lexical prefix is merged. The lexical prefix cannot influence the meaning of the verb and should have a transparent meaning given PIC2 i.e., it can only see through one phase head, not two phase heads. This holds true for (45-46) where both predicates retain the meaning assigned by the nominal head. Adding the lexical prefix to these verbs yields a transparent temporal meaning.

- | | | | |
|------|---|------|--|
| (45) | pa-pa-taik-au-ti
PRV-NOMP-peace-v-INF
*‘peace’, ‘to be toady from time to time’ | (46) | pa-uŹ-gaid-au-ti
PRV-NOMP-note-v-INF
*‘note’, ‘to be capricious from time to time’ |
|------|---|------|--|

6 Conclusion

I have established the identities of each class of prefixes and proposed analysis for each group given their structural and non-structural properties. Particularly, it was argued that nominal prefixes are

category defining heads whereas lexical prefixes are non-cyclic elements. I further gave evidence for this analysis showing that this correctly predicts polysemy resolution effects.

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