Phonological evidence for superlexical prefixes and asymmetric scope of thematic vowels in Czech

This talk aims at providing support for (i) the opposition lexical vs. superlexical prefixes (see Romanova 2007 and references therein) and (ii) the asymmetry in attachment of different theme vowels (Jablońska 2004) on the grounds of phonological evidence in Czech infinitives.

The phonological phenomenon that we show is sensitive to (i) and (ii) is templatic vowel length. The existence of templatic restrictions (in the Semitic sense) in Czech has been evidenced in work by Scheer (2003). A templatic restriction is the association of a fixed vocalic or consonantal volume to a specific morpho-semantic category. For instance, Czech iteratives (IT) and secondary imperfectives (SI) must weigh exactly three morae (we use this term in a strictly descriptive fashion with no theoretical implication: a long vowel counts for two, a short vowel or a syllabic consonant for one mora). This may be seen when observing the strange fact that the same IT/SI derivation sometimes produces lengthening (*sad-it --> sáz-et*, *skoč-it --> skák-at*), but at other times shortening (*cít-it --> -cit'-ovat*). Out of the 6 infinitive classes (thematic vowel 1. zero, 2. *-nou-*, 3. *-e-/-ě-*, 4. *-i-*, 5. *-a-*, 6. *-ova-*), IT/SI belong only to classes 3,5 or 6. The key to the puzzle is the fact that lengthening occurs in classes 3 and 5, while shortening is observed in class 6. The former share the fact of having a 1-mora thematic vowel, while the thematic element of class 6 weighs 2 morae. The generalization, then, is that an IT/SI must weigh exactly 3 morae: if concatenation provides only 2 morae (classes 3,5: when a short stem meets a short theme vowel), lengthening occurs, while shortening affects lexical ingredients that weigh 4 morae (class 6: long stem plus long thematic element).

Other categories that have been shown to be subject to templatic restrictions include diminutives, comparatives and infinitives. It is the latter that provide the relevant material for our demonstration. As a matter of fact,

(1) Czech infinitives must weigh at least two morae (or three, if the final *i* of the infinitive morpheme *-ti* is counted, which is only pronounced in high style).

This may be seen when looking at verbs such as *pít*, *růst* or *krást*, which systematically lose their length when occurring in a non-infinitive coat: finite forms (*piju*, *rostu*, *kradu*), past active participle (*pil*, *rostl*, *kradl*) etc. Hence, one may assume that the roots in question are underlyingly short and lengthen only in the infinitive in order to meet the templatic constraint that lies on this category. The reverse strategy, i.e. shortening on the grounds of an underlyingly long vowel, is not successful since there is no viable phonological context: shortening is usually observed in closed syllables, while in the present case we would face a case of open syllable shortening: the vowel is long in closed (infinitive), and short in *open* syllables (finite forms, participle). Hence the context is category-sensitive, rather than phonological.

Given (1), our focus is on the behaviour of prefixes and the way they interact with the computation of the templatic weight. They sometimes block lengthening (*zn**á**t - po-zn**a**t*, *cp**á**t - vy-cp**a**t*), but at other times do not (*tm**í**t se - se-tm**í**t se*, *kr**á**st - vy-kr**á**st*). Hence in the former case prefixes are counted in for the calculation of the moraic weight (the root, being lexically short, cf. participle *zn**a**l*, *cp**a**l*, does not have to lengthen because the prefixal vowel helps out), while in the latter they are not (the root vowel has to lengthen in order to meet the templatic restriction even though the prefixal vowel is present). The question is what decides whether prefixes count for the satisfaction of (1) (another interesting factor is negation, which behaves just like aspectual prefixes: *zn**á**t - po-zn**a**t - ne-zn**a**t vs. kr**á**st - vy-kr**á**st - ne-kr**á**st*).

The first thing to notice is that templatic activity in infinitives can only be detected if either the root or the theme vowel is zero: if both are expressed, the infinitive weighs two morae to start with, and hence will never lengthen (it must weigh at least 2 morae). Based on the electronic version of the Slovník Spisovné Češtiny (made by LEDA), we have compiled the list of infinitives which have only one expressed vowel (hence either the root or the theme vowel is zero, and counting out the infinitival *-i*). This vowel, then, is always long because of the templatic restriction (*tm**í**t se*, *br**á**t*, *p**á**st*, *b**á**t se*, etc.). Among these, we have identified those verbs whose long vowel is artificial, i.e. shortens in non-inifinitival forms (*tm**ě**l se*, *br**a**l* etc., against *p**á**sl*, *b**á**l se*). A first and obvious result is that only 3 classes out of 6 produce this kind of verb: class 1 (thematic vowel = zero), class 4 (th=i) and class 5 (th=a). A second generalization, also overtly accessible, is as under (2).

(2) Verbs with th= i never react on the presence of a prefix (i.e. never block lengthening):

tmít se – se-tmít se, *bdít – pro-bdít*, *dlít – pro-dlít*, etc.

Hence, there is clear indication to the end that membership in verb classes as defined by thematic vowels controls the behaviour of verbs with respect to prefixes. Therefore the behaviour of the remaining two classes should also be driven by their thematic vowel. In fact it is, but the verbs in question present a challenge to the analyst since their class membership often cannot be read off the surface. That is, the *á* in a surface CCát infinitive may either be the root vowel (CCá-ø-t, e.g. *smát se* - *vy-smát se*), hence the verb having th=ø, or the thematic vowel itself (CøC-á-t, e.g. *brát* - *za-brat*). This is disambiguated by the past passive participle (or adjectives built on it): the *-t* allomorph appears only when 1) the thematic vowel is zero and 2) the root is open (i.e. CV-, lacking the last consonant: *pí-ø-t – vy-pi-t-ý*, *smá-ø-t – vy-smá-**t**-ý*), while the -Vn allomorph serves in all other cases (e.g. *čís-ø-t – vy-čt-**en**-ý*, *br-á-t – za-br-**an**-ý*). Hence any verb which takes the *-t* allomorph must have th=zero.

The overall result, then, is very simple:

(3) Verbs with thematic vowels zero or *i* do not react on prefixes (*tm**í**t – se-tm**í**t*, *sm**á**t se – vy-sm**á**t se*), while verbs with th=a do react (*br**á**t – za-br**a**t*, *zn**á**t – po-zn**a**t*).

One way to think about (3) is that the templatic restriction applies in a syntactically defined domain which is determined by the location in the structure where the theme vowel is introduced. With th=a, the domain includes the prefix, with th=ø/i, it excludes the prefix:

(4) Length sensitive to the prefix: **[**$_{\text{Templatic domain}}$ [pref + ROOT] th=a **]**
Length insensitive to the prefix: [pref **[**$_{\text{Templatic domain}}$ ROOT + th=ø/i**]**]

The analysis in (4) posits an asymmetry in scope among the thematic vowels. The theme *-a-* scopes over the prefix and hence the templatic restriction applies in a structure that includes the prefix. The themes *-ø/i-* attach directly to the Root, and (where appropriate) give rise to lenghtening that cannot be undone by the later addition of the prefix. The status of negation in this picture needs to be worked out – for the time being we leave this an open question.

Evidence for the same asymmetry can also be found in the domain of (im)perfectivity. As in Slavic in general, the Czech aspectual system can be approximated as follows: simple Root = imperfective, [prefix+Root] = perfective, [[pref+Root]+suffix] = SI. Now recall that out of the three classes at hand, only the th=a class can form IT/SI (*mrz-nou-t* 'freeze' intr., imperf.; *za-mrz-nou-t* perf.; *za-mrz-**a**-t* SI/IT). This is indeed expected if th=a can take scope over the prefix (4) and determine the aspectual nature of the [pref+root] complex. On the other hand, no SI can be derived by th=ø/i, since these never attach outside of the [pref+Root] complex.

Another piece of evidence is the behaviour of the th=*-a-* class when combined with so-called superlexical prefixes. Whereas lexical prefixes always count for templatic length (*tk**á**t* 'weave imperf.' vs. *u-tk**a**t* 'weave perf.'), superlexical prefixes (subject to certain variation) do not (*do-tk**á**t* 'finish weaving').

In parallel to this observation, consider the syntax of superlexical prefixes. These differ from lexical prefixes (see e.g. the discussion in Romanova, 2007) in at least the following respects: (i) they can occur on top of other prefixes (lexically prefixed *vy-tahovat* can be further prefixed: *do-vy-tahovat*) (ii) they never change the lexical meaning, but only modify it either aspectually (picking a relevant sub-event, cf. *do-vy-tahovat* 'finish dragging out') or quantificationally (*po-vy-tahovat* 'drag out (things) one by one'). Romanova encodes these contrasts by different heights of attachment for lexical and superlexical prefixes, as under (5).

(5) [... superlexical prefixes ... [$_{\text{vP}}$ ... lexical prefixes ...]]

Now, if (4) and (5) are correct, and if furthermore thematic elements sit below v, the different behaviour of lexical and superlexical prefixes is actually predicted by our analysis. Since superlexical prefixes are generated high, they are outside of the scope of the infinitival template and consequently do not count for the two morae restriction. Hence the analysis under (4) not only handles the facts observed, but in addition complies with the analysis of superlexical prefixes (5) developed on independent grounds.

References

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