Prefix Lengthening in Czech

Markéta Ziková (MU Brno)
zikova@phil.muni.cz

1. V-final prefixes

- according to their phonological structure, Czech prefixes fall into two groups: V-final prefixes (e.g. za-, při-) and C-final prefixes (e.g. od-, před-)
- prefixes that end in high and low vowels, namely při-, vy-, u-, na- and za-, then have short and long allomorphs:

<table>
<thead>
<tr>
<th>V</th>
<th>VV</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>při-stavění</td>
<td>při-stavba</td>
<td>extension</td>
</tr>
<tr>
<td>vy-konaný</td>
<td>vý-konný</td>
<td>executed, high-performance</td>
</tr>
<tr>
<td>u-činit</td>
<td>ú-činkovat</td>
<td>to do, to perform</td>
</tr>
<tr>
<td>na-lepení</td>
<td>ná-lepka</td>
<td>sticking, sticker</td>
</tr>
<tr>
<td>za-kopání</td>
<td>zá-kop</td>
<td>digging in, trench</td>
</tr>
</tbody>
</table>

- problem: při-stavění and při-stavba are both nouns containing the root √stav, yet they still differ in the prefix length
- purpose: to show that the V-final prefixes allomorphy is not as random as examples in (1) indicate and as Czech grammars assume it to be

2. Prefix lengthening is templatic: Scheer (2001)

- the distribution of the prefix length has been analyzed by Scheer (2001) who has formulated the following generalization:

(2) The distribution of the length depends on the morpho-syntactic structure of the prefixed words, namely on whether they contain a verbal stem or not: the presence of a verbal stem correlates with the prefix shortness, the absence of it with the prefix length.

- Slavic verbal stems are made of roots and theme suffixes: [root-theme]stem,
- infinitives and nominals ending in -ní/-tí (i.e. stem-nominals) are both built on verbal stems and take short prefixes
- root-nominals lack a theme suffix and show long prefixes

<table>
<thead>
<tr>
<th>infinitive</th>
<th>stem-nominal</th>
<th>root-nominal</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>za-mot-ah-t</td>
<td>za-mot-ah-n-i</td>
<td>zá-mot-ek</td>
<td>to wrap, involution, cocoon</td>
</tr>
<tr>
<td>za-sah-ovah-t</td>
<td>za-sah-ovah-n-i</td>
<td>zá-sah</td>
<td>to interfere, interference, hit</td>
</tr>
<tr>
<td>za-lož-ih-t</td>
<td>za-lož-ih-n-i</td>
<td>zá-loh-a</td>
<td>to found, founding, deposit</td>
</tr>
<tr>
<td>za-táh-nuh-t</td>
<td>za-táh-nuh-t-i</td>
<td>zá-tah</td>
<td>to pull, pulling, tug</td>
</tr>
<tr>
<td>za-stav-čih-t</td>
<td>za-stav-čih-n-i</td>
<td>zá-stav-b-a</td>
<td>to build up, building up, built-up area</td>
</tr>
</tbody>
</table>
• Scheer: the prefix lengthening is of a templatic nature

• templates are known from languages with non-concatenative morphology
• the template = a connection between a certain portion of the morpho-syntactic structure and a certain portion of the phonological structure

• perfect template in Classical Arabic:

\[
\text{perfect} = \text{CaCVC} \quad \leftrightarrow \quad \sqrt{\text{rkb}} \quad \text{‘ride’} \quad \rightarrow \quad \text{rakib} \quad \text{‘ride, perfect’}
\]

\[
\text{perfect} = \sqrt{\text{fr}} \quad \text{‘flee’} \quad \rightarrow \quad \text{farar} \quad \text{‘flee, perfect’}
\]

• prefixal template in Czech:

\[
[[\text{prefix-}]\sqrt{\text{n}}] = \text{VVV} = 3 \text{ morae}
\]

• derivation of a root-nominal řá-mot-ek:

\[
[[\text{prefix-}]\sqrt{\text{n}}] = 3 \text{ m} \quad \leftrightarrow \quad [[\text{za-mot}]\text{ek}] \quad \rightarrow \quad [[\text{zá-mot}]\text{e}]
\]

• predictions of Scheer’s templatic analysis concerning the morphosyntactic structure:
  1. the prefix and root form a single constituent
  2. the existence of verbs with long prefixes

3. Scope of the template: lexical vs. superlexical prefixes

• prediction: in root-nominals the prefix and root form a constituent over which the template scopes

• Slavic prefixes are usually divided into two groups: lexical prefixes (LP) and superlexical prefixes (SP) which are (unfortunately) homophonic

• the main semantic and syntactic criteria used for their classification (taken from Romanova 2004):

\[
\begin{array}{ll}
\text{lexical prefixes} & \text{superlexical prefixes} \\
\text{have idiosyncratic or spatial lexical meaning} & \text{have measure function} \\
\text{can affect the argument structure} & \text{cannot affect the argument structure} \\
\text{attach to all types of stems} & \text{attach to atelic or imperfective stems} \\
\text{cannot stack} & \text{can stack} \\
\text{do not derive secondary imperfectives} & \text{derive secondary imperfectives}
\end{array}
\]

• Svenonius (2004): the different properties of LP and SP (or at least most of them) can be derived from their different position in the morpho-syntactic tree

• Svenonius' decomposition of verbal complex (specifier projections are omitted):
from (8) a prefix-theme dependency arises: a presence of a SP supposes a presence of a theme, LP are theme-independent

- a consequence: root-nominals lacking theme suffixes can be prefixed only with LP, while stem-nominals containing themes can take either LP or SP prefixes (and potentially both of them)

- this prediction is testified by the behaviour of double-prefixation:

(9) za-√stav-eth-ní poSP-za-√stav-eň-ní X zá-√stav-ba *po-zá-√stav-ba
vy-√taž-eth-ní poSP-vy-√taž-eň-ní X vý-√tah *po-vý-√tah
na-√tír-eth-ní poSP-na-√tír-eth-ní X ná-√tér *po-ná-√tér
u-√prav-ováň-ní poSP-u-√prav-ováň-ní X ú-√prav-a *po-ú-√prav-a

- to sum up: the decomposition of verbal structure in (8) provides a morpho-syntactic support for Scheer's templatic analysis: the template that causes the prefix lengthening in root-nominals supposes the prefix-root constituency which is now proved by the morpho-syntax – root-nominals are prefixed only with lexical prefixes which always form constituents with their roots

4. Context of the template: denominal verbs

- Scheer (2001): the prefix is long in a nominal environment and it is short in a verbal environment
- nouns like u-pad-nu-t-í “decline” have short prefixes → there is no relationship between the prefix quantity and the morpho-syntactic status of the whole word in which a given prefix ends up:

- a crucial contrast:
- in nouns like u-pad-nu-t-í the prefix is short because the next constituent above the prefix-root constituent is headed by a verbal theme (-nu)
- in nouns like ú-pad-ek the prefix is long because the next higher constituent above a prefix-root constituent is headed by a nominal suffix (-ek)

(10) a. [[u-pad]nuňň]...                    b. [[ú-pad]ekňň]

- prediction: verbs with long prefixes could exist, they will be derived from root-nominals
• their structure should look like as in (11):

(11) [[[prefix-root]nominal suffix]theme suffix]

• this prediction is really born out:

(12) ná-mit-k-ova-t “to raise objections” < ná-mit-k-a “objection”
    ná-lep-k-ova-t “to put stickers on” < ná-lep-k-a “sticker”
    ú-čin-k-ova-t “to perform” < ú-čin-ek “effect”

• but: root-nominals can be derived also by null suffixes → a possibility arises that also null-derived nouns will be further verbalized:

(13) ú-čt-ova-t “to invoice” < ú-čet “an invoice”
    zá-vod-i-t “to race” < zá-vod “a race”
    zá-loh-ova-t “to make a backup” < zá-loh-a “a backup”
    vý-let-ova-t “to make trips” < vý-let “a trip”

• from the linear point of view there is no difference between verbs like zá-loh-ova-t and za-lož-i-t: the theme suffixes are adjacent to their roots

• morpho-syntactically: the root and theme belong to two non-adjacent constituents → verbs in (13) are built on null-derived nouns

• three independent arguments for this:
  1. they show long prefixes, but in verbs where the root and the theme occur in adjacent constituents, the prefixes are short; cf. zá-loh-ova-t vs. za-lož-i-t
  2. they are imperfectives, but verbs with lexical prefixes are perfectives: zá-loh-ova-t is impf., za-lož-i-t is pf.
  3. their meaning is based on the idiosyncratic meaning of given root-nominals; see a minimal pair vý-let-ova-t “to fly upwards” and vý-let-ovat “to take a trip”

• conclusion: verbs in (12) and (13) both have a structure as in (12): the crucial fact being that the nominal suffix intervening between a prefix-root constituent and theme can be a phonological null

• the generalizations about the scope of the template and its morpho-syntactic context and their consequences we have made up to now:

(14) - only lexical prefixes form a constituent with roots → only lexical prefixes are in the scope of the template
  - if the next constituent above a lexical prefix-root constituent is headed by a nominal suffix, the template is activated, which triggers the prefix lengthening
  - if the next constituent above a lexical prefix-root constituent is headed by a verbal suffix (theme), nothing happens phonologically, that is the prefix remains short

consequences:
- root-nominals (ná-lep-k-a) or verbs built on them (ná-lep-k-ova-t) show long prefixes
- short prefixes occur in verbs (na-lep-i-t) and stem-nominals (na-lep-e-n-i)
• question: how can these generalizations be expressed in a theory of the syntax-phonology interface?

5. Templates on the syntax-phonology interface: word internal phases

• three main assumptions about how the morpho-syntactic and morpho-phonological structure of words are derived:
  
• words are built syntactically, by two processes: Merge and Move (a core assumption of a theory of DM; see Marantz 2001)
• no additional structure mediates between the syntax and phonology (see Scheer 2009 where aspects of a theory of the direct interface are investigated)
• templates are associated with particular nodes of the morpho-syntactic structure (see Caha & Scheer (2008) and their templatic analysis of Czech infinitives)

• Svendonius’ (2004) verbal decomposition: lexical prefixes are inserted into a RP head which is c-commanded by a VP where a verbal root is inserted
• the structure of a prefix-root constituent created by the head-movement (upward arrows denote the spell-out of the structure):

\[
\begin{array}{c}
V^o \\
R^o & V^o \\
\uparrow & \uparrow \\
LP & \sqrt{}
\end{array}
\]

- the complex head in (15) is subject to the templatic constraint (which causes lengthening of the prefix), but only if it is followed immediately by a nominal suffix
- a translation into the morpho-syntactic tree: a prefix-root constituent is adjoined to a little \( n \) head where a nominalizing suffix is spelled-out

\[
\begin{array}{c}
\text{n}^\circ \\
V^o & \text{n}^\circ \\
\uparrow & \uparrow \\
R^o & V^o \\
\uparrow & \uparrow \\
LP & \sqrt{} \text{ nominal suffix}
\end{array}
\]

- the template which counts vocalic items inside the prefix-root constituent is triggered when this constituent adjoins the nominalizing head \( n \)
- as a consequence, a root-nominal with the long prefix is derived:
the analysis when the template is activated automatically after adjunction of a complex verbal head, made of a LP and a root, to a nominal head little \( n \) can explain:

• why stem-nominals show short prefixes: in stem-nominals a complex verbal head in question is not adjoined to a little \( n \), but to a little \( v \) (where a stem building suffix is spelled-out) – hence the template is not activated
• why verbs can display long prefixes: denominal verbs contain the subtree depicted in (17) – the template is thus activated as in root-nominals, a fact that a complex little \( n \) head (in which a complex verbal head with a LP is embedded) is further adjoined to little \( v \) does not matter
• why only verbal prefixes lengthen: the template scopes just over roots that are spelled-out in a V head thus V-final prefixes like the \( pra- \) (e.g. \( pra-les \) “primeval forest”, \( pra-děd \) “great grandfather”, \( pra-věk \) “prehistory”), which never occurs in verbs, do not lengthen

6. Phonology of the template: two templatic types

• two possibilities how the tri-moraic constraint on a prefix-root constituent can be satisfied:

\[
\begin{array}{c|c|c}
\text{gloss} & \text{VV-V}_{3\text{morae}} & \text{V-VV}_{3\text{morae}} \\
\hline
\text{za-pad-k-a} & \text{za-vář-k-a} & \text{latch, garnish}
\end{array}
\]

• at first sight, an analysis of the distribution of the length within a prefix-root constituent is straightforward: prefixes lengthen only if they are attached to short roots
• when the same prefix takes a bi-moraic root, it does not need to lengthen in order to meet the template

• however: some roots occur in both templatic types (VV-V and V-VV) \( \rightarrow \) they display long and short allomorphs
• a choice of the templatic type seems to depend on the suffix (i.e. a lexical material associated to a little \( n \) head) and gender \( \rightarrow \) masc. root-nominals derived by a null suffix fall to the VV-V type, feminine root-nominals derived by -\( k \) fall to the V-VV type:
• however, feminines derived by the suffix -k have also the VV-V structure:

\[
\begin{array}{ll}
\text{ná-raz, pří-raz, ú-raz, vý-raz} & \text{na-ráž-k-a, pří-ráž-k-a, u-ráž-k-a, vy-ráž-k-a} \\
\text{ná-klad, ú-klad, vý-klad, zá-klad} & \text{na-klád-k-a, u-klád-k-a, vy-klád-k-a, za-klád-k-a} \\
\text{vý-chod, zá-chod} & \text{vy-cház-k-a, za-cház-k-a} \\
\text{vý-var, zá-var} & \text{vy-vář-k-a, za-vář-k-a} \\
\text{ú-kaz} & \text{u-káz-k-a} \\
\text{vý-nos} & \text{vy-náš-k-a} \\
\text{vý-voz} & \text{vy-váž-k-a}
\end{array}
\]

• generalization: feminines in -ka with long roots and short prefixes tend to have event interpretation, feminines in -ka with short roots and long prefixes tend to have result interpretation

7. Conclusion

• I have shown that the templatic account to the prefix length proposed by Scheer (2001) has a number of consequences concerning the morpho-syntax of prefixes and generally the syntax-phonology interface.

• Scheer's analysis supposes that the prefix and root form a single constituent (over which the template scopes). I have shown that this prediction is independently supported from the morpho-syntax: lexical prefixes form complex verbal heads with their roots.

• I have also proposed that the template is associated to a particular morpho-syntactic tree. From this two things follow: the template is activated only when this tree is present within a given word (this is the reason why stem-nominals do not show long prefixes) and vice versa whenever this tree is embedded within a word structure, the template is triggered (this is the reason why denominal verbs can display long prefixes)

References


Marantz, Alec. 2001. Words and things. Handout, MIT.


