The aspectual nature of Slavic prefixes

0 OUTLINE OF THE TALK

- background assumptions: inner and outer aspect
- Slavic VP-internal and -external prefixes:
  - internal prefixes are resultative (telic), external prefixes fulfil certain adverbial functions
- account for the syntactic and semantic role of Slavic internal prefixes in event structure in terms of first phase syntax (Ramchand 2005) and vector space semantics (Zwarts & Winter 2000, Zwarts 2005)
- apparent problem: the goal-source asymmetry in Czech (Filip 2003)
- the goal-source asymmetry in Germanic (Nam 2004)
- conclusions

1 INNER AND OUTER ASPECT

- inner aspect: predicates at VP level that are atelic or telic (lexical aspect)
- outer aspect: temporal boundedness at sentence level (e.g. grammatical aspect)

Slavic: obligatory grammatical verbal category of aspect

criteria to set perfective and imperfective verbs apart:

- only imperfective but not perfective verbs can combine with phase verbs:
     - ‘He began writing a / the letter.’

- only imperfective but not perfective verbs derive periphrastic future forms:
  2. On will write.IPF / *ON-write.PF / *PO-write.PF letter.ACC
     - ‘He will write a / the letter.’

aspectual information on the verb:

- perfectivizing prefixes
- imperfectivizing suffixes (vowel alternation)
- most morphologically simple verbs are imperfective

3. (a) ipf. spat’ > pf. po-spat’ – ‘to sleep’
   - ipf. pisat’ > pf. po-pisat’ – ‘to write’
   - ipf. pisat’ pis’mo > pf. na-pisat’ pis’mo – ‘to write a / the letter’
(b) pf. dat’ > ipf. da-va-t’ – ‘to give’
   - pf. pod-pisat’ > ipf. pod-pis-yva-t’ – ‘to sign (lit. under-write)’
   - pf. iz-dat’ > ipf. iz-da-va-t’ – ‘to edit (lit. out-give)’
(c) ipf. vy-da-va-t’ knigi > pf. po-vy-da-va-t’ knigi – ‘to give out / distribute (the) books’
(d) Czech pf. od-stoupit > pf. po-od-stoupit – ‘to step aside (a bit)’

no uniform marking of the perfective or the imperfective aspect

- not every perfective verb form contains a prefix
- not every imperfective verb form contains a suffix
- prefixes do not exclusively mark perfectivity
- prefixes do not exclusively mark telicity
telicity:
⇒ property of the VP, which constitutes an event
⇒ one instantiation of telicity: resultativity

2 SLAVIC INTERNAL AND EXTERNAL PREFIXES

di Sciullo & Slabakova (to appear): internal vs. external prefixes
Jabłońska / Miličević / Ramchand / Romanova / Svenonius (2004): lexical vs. superlexical prefixes
Isačenko (1962): qualifizierende vs. modifizierende Verbalpräfixe

internal prefixes:
⇒ internally prefixed verbs are lexically distinct from their non-prefixed counterparts
⇒ semantic contribution of an internal prefix is often idiosyncratic

external prefixes:
⇒ predictable meaning effect, similar to adverbial modifiers on the meaning of the whole VP
⇒ do not derive new lexical items

(4) a. Russ. pf. pod-pisat’ – ‘to sign’ (lit.: under-write)   internal
    b. Russ. pf. po-pisat’ – ‘to write (for a while)’   externals
    Russ. pf. za-pisat’ – ‘to (begin to) write’

(5) internal vs. external prefixes in Russian and Czech

<table>
<thead>
<tr>
<th></th>
<th>internal prefixes</th>
<th>external prefixes</th>
</tr>
</thead>
<tbody>
<tr>
<td>argument structure effects possible</td>
<td>+</td>
<td>–</td>
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<tr>
<td>derive SECONDARY IMPERFECTIVES</td>
<td>+</td>
<td>–</td>
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<td>derive event nominals and participles</td>
<td>+</td>
<td>–</td>
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<tr>
<td>stacking</td>
<td>–</td>
<td>+</td>
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</table>

⇒ argument structure effects

(6) pf. dat’ komu čto – ‘to give whom what’  Russian
    pf. iz-dat’ (*komu) čto – ‘to publish (*whom) what’ (lit.: out-give)  internal

(7) ipf. sidet’ (gde) – ‘to sit (where)’:
    a. pf. po-sidet’ (gde) dolgo – ‘to sit (where) for a long time’  externals
    pf. pro-sidet’ (gde) dolgo – ‘to sit (where) for a long time’
    b. pf. po-sidet’ čto, *kogo / *čemu, *komu
       PO-sit.INF *what.ACC, *who.ACC / *what.DAT, *who.DAT
       pf. pro-sidet’ *čto, *kogo / *čemu, *komu

⇒ secondary imperfectivization

(8) a. internal: pf. iz-dat’ – ‘to publish’  > ipf. iz-da-yva-t’  Russian
    pf. pod-pisat’ – ‘to sign’  > ipf. pod-pis-yva-t’
b. external: pf. pro-sidet’ – ‘to sit (for longer)’  > ipf. pro-siž-iva-t’
    pf. za-pisat’ – ‘to (begin to) write’  > ipf. za-pis-yva-t’

⇒ deverbal derivations

(9) a. ipf. čitat’ (čto) – ‘to read (sth.)’  > čtenie  Russian
    pf. pro-čitat’ čto – ‘to read sth.’  > pro-čtenie  internal
    b. pf. po-čitat’ – ‘to read (for a while)’  > *po-čtenie  externals
    pf. za-čitat’ – ‘to (begin to) read’  > *za-čtenie
LAGB satellite workshop on Perfectivity and Telicity
Cambridge, UK, September 3rd – 4th, 2005

(10) a. čita-juščij (present active) Russian
b. čita-emyj (present passive)
c. (pro-)čita-všij (past active)
d. pro-čita-nyj (past passive)
e. čita-ja (imperfective adverbial participle (gerund))
f. pro-čita-v (perfective adverbial participle)

(11) a. *počitajuščij, *začitajuščij Russian
b. *počitaemyj, *začitaemyj
c. *počitavšij, *začitavšij
d. *počitannyj, *začitannyj
e. *počitaja, *začitaja
f. *počitav, *začitav

⇒ stacking of prefixes
(12) a. Russian ‘OUT-give + po-’:
b. Czech ‘AWAY-step + po-’:
   pf. od-stoupit > pf. po-od-stoupit but: *od-po-stoupit

3 INTERNAL PREFIXES INDUCE TELICITY
⇒ (in)compatibility with temporal adverbials for an hour and in an hour
(13) On ot-kryl okno *(za) čas.
   he opened.PF window.ACC *(in) hour.ACC
   ‘He opened a / the window in / *for an hour.’
(14) On po-spal (*za) čas.
   he  PO-slept.PF (*in) hour.ACC
   ‘He slept *in / for an hour.’
⇒ entailment test: x Ved (y) as (not) entailing x no longer Vs (y) (Borik 2002)
(15) a. Ja na-pisal’ pis’mo.  ==> Ja (uže) ne pišu’ pis’mo. internal / telic
   I ON-write.PAST letter.ACC    I (anymore) not write.PRES letter.ACC
   ‘I wrote a / the letter.’       ‘I don’t write the letter anymore.’
b. Ja po-pisal’ pis’mo. =/==> Ja (uže) ne pišu’ pis’mo. external / atelic
   I PO-write.PAST letter.ACC    I (anymore) not write.PRES letter.ACC
   ‘I wrote (at) a / the letter.’   ‘I don’t write (at) the letter anymore.’

4 SLAVIC PREFIXES IN SYNTAX AND SEMANTICS
Matushansky (2002):
Russian prefixes and prepositions constitute a single category P
⇒ same morpho-phonological status
⇒ semantic differences are consequences of the immediate syntactic context – attachment to VP or DP/CP
⇒ nearly all Slavic prefixes can be used as or are homophonous to prepositions
the syntax and semantics of prefixes and prepositions can be treated alike
proposal:      first phase syntax (Ramchand 2005)
                vector space semantics (Zwarts & Winter 2000), prepositional aspect (Zwarts 2005)
4.1 event structure and Ps

(16) The syntax / semantics of the first phase (Ramchand 2005)

\[
\begin{align*}
\text{initP} & \quad (e_1 - \text{initial state}) \\
\text{initiator} & \quad \text{init}' \\
\text{procP} & \quad (e_2 - \text{process event}) \\
\text{undergoer} & \quad \text{proc}' \\
\text{resP} & \quad (e_3 - \text{result state}) \\
\text{resultee} & \quad \text{res}' \\
\text{res} & \quad \text{XP}
\end{align*}
\]

(17) Event Composition Rule (Ramchand 2005, p. 37)

\[ e = e_1 \rightarrow e_2: e \text{ consists of two subevents, } e_1, e_2 \text{ such that } e_1 \text{ causally implicates } e_2. \]

different roads to telicity:

a. resultativity

identifiers of resP:
\[ \Rightarrow \text{ particle or object of Germanic verb-particle construction (particle shift)} \]
\[ \Rightarrow \text{ resP verbs like } \textit{find}, \text{ semelfactive } \textit{jump} \text{ etc.} \]
\[ \Rightarrow \text{ resultatives: } \textit{He hammered the metal flat}. \]

Ramchand & Svenonius (2002): English particles as particle phrases (PrtPs) in complement to RP [resP]

(18) \textit{throw the dead rat out}

\[ \begin{align*}
\text{a. } & [vP \text{ AGT throw-v} [vP \text{ UNDRG tv} [RP \text{ HOLDR out-R} [\text{PrtP the rat} [\text{Prt tv} [\text{Prt out}]])]]] & \\
\text{b. } & [vP \text{ AGT throw-v} [vP \text{ UNDRG tv} [RP \text{ the rat} [\text{PrtP tvDP the rat} [\text{Prt tvPrt out}]])]] & \\
\end{align*} \]

b. homomorphism between events and scales

with verbs that do not directly identify resP telicity can arise due to a homomorphism between the domain of objects and the domain of events (Krifka 1998): \textit{He wrote the letter vs. He wrote letters}.

homomorphism relation generalized to other elements that provide a scale along which the event can be measured out (Hay, Kennedy & Levin 1999, Beavers to appear, among others)

scales can be provided by:
\[ \Rightarrow \text{ incremental themes} \]
\[ \Rightarrow \text{ adjectives underlying the verbal denotation in degree achievements, e.g. } \textit{widen} \]
\[ \Rightarrow \text{ spatial domain provided by directional PP (incremental paths)} \]

suggestions for the syntactic role of Slavic internal prefixes: identify a result state subevent
\[ \Rightarrow \text{ option 1: identify the result state subevent directly as res}^\circ \text{ (Romanova 2004, Ramchand 2004)} \]
\[ \Rightarrow \text{ option 2: PPs in complement to resP, just like Germanic particles} \]
\[ \Rightarrow \text{ option 3: loc}^\circ \text{ (interpreted as the final location) in a tripartite prepositional structure} \]

option 1 or 2: for most of the internal prefixes discussed in the previous section, e.g. \textit{na-pisat’} ‘on-write’, \textit{pro-čitat’} ‘through-read’, \textit{pod-pisat’} ‘sign’ (lit. under-write), \textit{ot-kryt’} ‘open, discover’ (lit. away-cover), \textit{za-kryt’} ‘close’ (lit. in-cover), \textit{iz-dat’} ‘edit’ (lit. out-give), \textit{pro-dat’} ‘sell’ (lit. through-give) etc.

option 3: for those prefixes that obligatorily co-occur with PPs (usually motion events)?

\[ ^{1} \text{But see Svenonius 2004 for evidence for phrasal movement of these Slavic prefixes.} \]
4.2 vector space semantics and prepositional aspect

- Zwarts (2005): locative (stative) vs. directional (dynamic) prepositions
- Zwarts & Winter (2000): semantics of locative prepositions

example: locative PP behind the house

set of vectors that go from the house to points behind it
location function assigns any physical entity in D its location in space – to derive sets of located vectors, mapping an e-type denotation of the reference object to a vector that describes its location or dimension

穿梭 non-projective locative Ps: in, on, at

require only spatial knowledge about the location of figure and ground with respect to one another; defined as boundary vectors on sets of points:

\[
\begin{align*}
(19) \quad & \text{a. in'} = \lambda A. \lambda v. \text{int}(v, A) \\
& \text{b. at'} = \lambda A. \lambda v. \text{ext}(v, A) \land |v| < r_o \\
& \text{(with } r_o \approx 0, A \text{ as a set of points, } v \text{ as a boundary vector of } A) \\
\end{align*}
\]

穿梭 projective locative Ps: over, under, behind

involve a certain axis modelled along the lines of three orthogonal unit vectors in the vector space V for up, right and front:

\[
\begin{align*}
(20) \quad & \text{a. under'} = \lambda A. \lambda v. \text{ext}(v, A) \land c(-\text{up}, v) > |v_{\perp \text{-up}}| \\
& \text{b. behind'} = \lambda A. \lambda v. \text{ext}(v, A) \land c(-\text{front}, v) > |v_{\perp \text{-front}}| \\
\end{align*}
\]

穿梭 directional Ps

map the reference object to a set of sequences of vectors (paths), each of these sequences determines a potential change in position of the figure.

\[
(21) \quad \text{A path is a function of type } iv \text{ from the real interval } [0,1] \subset \mathbb{R} \text{ (type } i) \text{ to vectors (type } v). \\
(22) \quad \text{A PP is bounded (telic) iff it does not have cumulative reference} \\
(23) \quad \text{A set of paths } X \text{ is cumulative iff} \\
& \text{(i) there are } p \text{ and } q \in X \text{ such that } p + q \text{ exists and} \\
& \text{(ii) for all } p, q \in X, \text{ if } p + q \text{ exists, then } p + q \in X. \\
\]

concatenation: partial operation subject to the condition that the second path starts where the first path ends

athletic PPs are closed under sums, telic PPs are not

\[
(24) \quad \text{a. bounded, telic: to, into, onto, from, out of, off, away from, past, via} \\
\quad \text{b. unbounded, atelic: towards, along} \\
\quad \text{c. (un)bounded, (a)telic: across, around, down, over, through, up} \\
\]

goal and source prepositions: transitions from one phase to another (Zwarts 2005):

\[
(25) \quad \{ p : \text{there is an interval } I \subset [0,1] \text{ including...} \\
& \text{... 0 and consisting of all the } i \in [0,1] \text{ for which } p(i) \text{ is at } x \} = [[ \text{from } x ]] \\
& \text{... 0 and consisting of all the } i \in [0,1] \text{ for which } p(i) \text{ is on } x \} = [[ \text{off } x ]] \\
& \text{... 0 and consisting of all the } i \in [0,1] \text{ for which } p(i) \text{ is in } x \} = [[ \text{out of } x ]] \\
& \text{... 1 and consisting of all the } i \in [0,1] \text{ for which } p(i) \text{ is at } x \} = [[ \text{to } x ]] \\
& \text{... 1 and consisting of all the } i \in [0,1] \text{ for which } p(i) \text{ is on } x \} = [[ \text{onto } x ]] \\
& \text{... 1 and consisting of all the } i \in [0,1] \text{ for which } p(i) \text{ is in } x \} = [[ \text{into } x ]] \\
\]
4.3 Slavic prefixes as Ps

(26) Russian and Czech goal and source prepositions:

<table>
<thead>
<tr>
<th>Russian</th>
<th>Czech</th>
</tr>
</thead>
<tbody>
<tr>
<td>do (+ GEN), k (+ DAT)</td>
<td>do (+ GEN), k (+ DAT)</td>
</tr>
<tr>
<td>k (+ DAT)</td>
<td>k (+ DAT), vůčí (+ DAT)</td>
</tr>
<tr>
<td>v (+ ACC)</td>
<td>do (+ GEN)</td>
</tr>
<tr>
<td>na (+ ACC)</td>
<td>na (+ ACC)</td>
</tr>
<tr>
<td>ot (+ GEN)</td>
<td>od (+ GEN)</td>
</tr>
<tr>
<td>iz (+ GEN)</td>
<td>z (+ GEN)</td>
</tr>
</tbody>
</table>

exclusively directional:

- Russian and Czech k (+ DAT) ‘to(wards)’ and na (+ ACC) ‘onto’
- Czech vůčí (+ DAT) ‘towards’
- Russian v (+ ACC) ‘into’

exclusively locative:

- Russian and Czech v (+ PREP) ‘in’
- Russian and Czech na (+ PREP) ‘on’

(27) Russian and Czech goal and source prefixes:

<table>
<thead>
<tr>
<th>Russian</th>
<th>Czech</th>
</tr>
</thead>
<tbody>
<tr>
<td>do-, při-, *k-</td>
<td>do-, při-, *k-, *vůčí-</td>
</tr>
<tr>
<td>v-, za-</td>
<td>do-</td>
</tr>
<tr>
<td>(na-)</td>
<td>(na-)</td>
</tr>
<tr>
<td>ot-, u-</td>
<td>od-, u-</td>
</tr>
<tr>
<td>iz-, vy-</td>
<td>vy-</td>
</tr>
</tbody>
</table>

prepositional counterparts of additional prefixes:

- pri (při) (+ PREP) ‘at, by’
- za (+ ACC) / (+ INSTR) ‘within’ / ‘behind, at, with, …’
- u (+ GEN) ‘at’
- Old Slavonic vřn (+ GEN) > Modern Russian / Czech adverbial von / ven ‘outside’

contra Filip (2003), among others, with Žaucer (2004):

Slavic internal prefixes are locative Ps, identifying a result state subevent

- no prefixal counterparts to exclusively directional prepositions
- prefixal counterparts to purely locative prepositions
- the prefixes are stative and license / identify a result state subevent
- such prefixed predicates are always telic

possibility: Slavic internal prefixes on motion verbs as loc° in a tripartite prepositional structure

- a PP can be maximally decomposed into initial, process (path) and locative part (recall (25))
- Slavic (internal) prefixes on motion verbs identify the locative part which is interpreted as the final location

(28) \[ pP [ pathP [ locP ]] \]

goal phrases: pathPs with embedded loc
atelic pathPs involving towards: no embedded loc
source phrases involving from: complex pP + pathP but no embedded locP – no final location, but still definite transition point of the event

\(^2\) The prefix na- is only found on the motion verb idti / jít ‘go’. Najti and najít, however, do not convey the meaning of a motion on foot onto something but have the different lexical meaning of ‘find’. To describe a motion onto something, other prefixes are used depending on the particular perspective such as Russian so-jti ‘descend’ (lit. down-go) or Czech vze-stoupit ‘ascend’ (lit. up-step).
5 AN APPARENT PROBLEM: THE GOAL-SOURCE ASYMMETRY

syntactic and semantic asymmetries between goal and source Ps

- Nam (2004)
  (29) a. Sharon kicked the ball under the table. (goal / *source)
     b. Hugrún jumped in the lake.
  (30) a. *Onder welke brug door is het vliegtuig gevolgen? under which bridge through is the plane flown
     b. Van welke brug ben jij gelopen? from which bridge are you walk
  (31) a. The store can be run to / *from in a matter of minutes.
     b. The boat is jumped into / *from.
     c. The house is moved into / *from.
  (32) a. Mary ran to the store in / *for ten minutes.
     b. Mary ran from the library *in / for ten minutes.

  goal PPs are generated under the lower VP of the extended VP structure composing a result state subevent
  source PPs are generated under the higher VP, modifying a process subevent
  goal-oriented PPs induce telicity whereas source-oriented ones do not

- Filip (2003)

  Czech source prefixes grammatical with measure expressions
  Czech goal prefixes ungrammatical with measure expressions

  (33) a. Po-vy-táhl káru z příkopu. (= (49) b. in Filip 2003, p. 94)
      PO-OUT-dragged.PF cart.ACC out-of ditch.GEN
      ‘He dragged the cart out of the ditch a bit.’
  b. *Po-do-táhl káru do příkopu. (= (50) b. in Filip 2003, p. 94)
      PO-(IN)TO-dragged.PF cart.ACC (in)to ditch.GEN
      ‘He dragged the cart (in)to the ditch a bit.’

  The Telicity Constraint (Filip 2003, p. 63)
  Telicity modifiers express functions that map atelic (homogeneous) predicates onto telic predicates: \( \lambda P \lambda e[P(e) \land HOM(P)(e)] \rightarrow \lambda P \lambda e[P(e) \land TEL(P)(e)] \).

  Goal-Source Telicity Asymmetry (Filip 2003, p. 79)

  Filip (2003), p. 61: A verbal predicate is telic if it denotes either
  (i) a set \( P_C \), i.e., a set of single atomic events contextually restricted by \( t \) (a time index) and \( M \) (a measure statement for \( P \)), or
  (ii) a plural set of atomic events of a definite cardinality.
  Otherwise the predicate is atelic.
  \( M: \forall e \ [ P(e) \land Q(e) \rightarrow |e| = 1] \), where \( Q \) is a context-dependent variable.

  two options to fit these data into the system outlined so far:
  a. source prefixes are VP-external, goal-prefixes are VP-internal
  b. both are VP-internal, but internal prefixes fall into two groups, one being resultative and thus inducing telicity, the other modifying procP

3 Filip provides the following examples for telicity modifiers: directional PPs with motion verbs (e.g. to the store), temporally delimiting adverbials (e.g. for an hour) and resultatives (e.g. to hammer the metal flat).
5.1 Russian and Czech goal and source prefixed predicates are internal

(37) a. skočit – ‘jump’
    přiskočit k čemu / komu – ‘TO-jump to s.th. / s.o.’
    odskočit od čeho / koho – ‘AWAY-jump from s.th. / s.o.’
    tahnout něco – ‘draw, pull, drag s.th.’
    do-tahnout něco do čeho – ‘IN-drag s.th. into s.th.’
    vy-tahnout něco z čeho – ‘OUT-drag s.th. out of s.th.’

b. téhnout něco – ‘draw, pull, drag s.th.’
    do-téhnout něco do čeho – ‘IN-drag s.th. into s.th.’
    vy-itéhnout něco z čeho – ‘OUT-drag s.th. out of s.th.’

(38) a. přiskočit > přiskákati – ‘TO-jump’
    odskočit > odskákati – ‘AWAY-jump’

b. tahnout něco > tahnout – ‘draw, pull, drag s.th.’
    do-tahovati > do-tahovati – ‘IN-drag’
    vy-tahovati > vy-tahovati – ‘OUT-drag’

(39) a. past passive participle do-tahnutý > do-tahnutí – ‘IN-dragging’

b. past passive participle vy-tahnutý > vy-tahnutí – ‘OUT-dragging’

(40) a. skočený > skočení – ‘to jump’

b. skočený > skočení – ‘FROM-jumping’

5.2 Russian and Czech goal- and source-prefixed predicates are telic

(41) root skočit – ‘to jump’; (Filip’s claim for Czech)
    a. po-odskočit, od-po-skocít (AWAY-jump + po-)
    b. *po-při-skocít, *při-po-skocít (TO-jump + po-)

(42) root sednout si – ‘to sit down’; (Filip’s claim for Czech)
    a. po-odsednout, od-posesnout si (AWAY-sit-down + po-)
    b. *po-při-sednout, *při-po-sednout si (TO-sit-down + po-)

(43) a. *od-při-sednout si

b. *při-po-sednout si

(Czech judgments)

(44) a. po-od-sednout si

b. *při-po-sednout si

(Czech judgments)

(45) a. On pri-letep v Moskvu *den’ / za den’ (do prazdnika).
    he TO-flew in Moscow.ACC *day.ACC / in day.ACC to holiday.GEN
    ‘He arrived in Moscow (by plane) *for a day / a day before the holiday.’
    b. On u-letep iz Moskvy *den’ / za den’ (do prazdnika).
    he AWAY-flew out-of Moscow.GEN *day.ACC / in day.ACC to holiday.GEN
    ‘He left Moscow (by plane) *for a day / a day before the holiday.’

    he more not TO-fly.PRES in Moscow

    he more not AWAY-fly.PRES out of Moscow

(47) a. Vy-táhfp káru z příkopu *(za) hodinu.
    OUT-dragged cart.ACC out-of ditch.GEN *(in) hour.ACC
    ‘He dragged the cart out of the ditch (in / *for) an hour.’
    b. Do-táhfp káru do příkopu *(za) hodinu.
    (IN)TO-dragged cart.ACC in)to ditch.GEN *(in) hour.ACC
    ‘He dragged the cart (in)to the ditch (in / *for) an hour.’

(48) a. Vy-táhp káru z příkopu.    =>  Už ne-vy-tahuje káru z příkopu.
    anymore not-OUT-drag.PRES cart out of ditch

b. Do-táhp káru do příkopu.    =>  Už ne-do-tahuje káru do příkopu.
    anymore not-(IN)TO-drag.PRES cart into ditch

(Czech judgments)
6 THE NATURE OF THE GOAL-SOURCE ASYMMETRY

Zwarts & Winter (2000): not all locative PPs can be modified by measure phrases

(49) **Modification Condition:** A set of located vectors \( W \subseteq V \times V \) satisfies the modification condition iff \( W \) is \( \text{VMON}^\uparrow \), \( \text{VMON}^\downarrow \) and non-empty.

(50) **vector monotonicity:** Let \( P \) be a prepositional function and \( X \subseteq D_p \).

a. \( P \) is **upward vector-monotone** over \( x \) (\( \text{VMON}^\uparrow \)) iff
\[ \forall A \in X \forall u, v \in D_r [u \leq v \rightarrow (P(A)(u) \rightarrow P(A)(v))]. \]

b. \( P \) is **downward vector-monotone** over \( x \) (\( \text{VMON}^\downarrow \)) iff
\[ \forall A \in X \forall u, v \in D_r [u \leq v \rightarrow (P(A)(v) \rightarrow P(A)(u))]. \]

(51) **Universal:** All simple locative prepositions in natural language are downward monotone.

(52) \( \text{VMON}^\uparrow \): in front of, behind; above, over, below, under; beside; outside not VMON\(^\uparrow\): near, on, at; inside, in; between

Slavic prefixes as locative Ps identify the result state subevent, predicated over an event participant:

- he dragged the cart into the ditch \( \approx \) dragging, he caused the cart to be **inside** the ditch
- he dragged the cart out of the ditch \( \approx \) dragging, he caused the cart to be **outside** the ditch

**PO- MODIFIES THE RESULT STATE DENOTED BY THE SOURCE PREFIX, A LOCATIVE PP**

- only the result state of the source-oriented VP (e.g. **outside the ditch**) is upward monotone, hence only this VP can be modified by **po-**
- goal-oriented VPs cannot combine with **po-**: their result states (e.g. **inside the ditch**) are not upward monotone
- both events are telic and contain a result state subevent

**Further support for **po-** as modifier of the result state:**

neither imperfective source-prefixed nor imperfective goal-prefixed verbs can combine with **po-**:

(53) *po-vy-tahovat\(^p\), *po-do-tahovat\(^p\) – pull + out / in (imperfective) with **po-**
*po-od-skákat\(^p\), *po-při-skákat\(^p\) – jump + away / to (imperfective) with **po-**
*po-od-sed\(^e\)tp, *po-při-sed\(^e\)tp – sit down + away / to (imperfective) with **po-**

explanation: if the imperfective operator brings about that the result state subevent cannot be accessed anymore (Arsenijević 2004), this result state subevent can also not be modified by **po-** anymore

**Interim summary**

- Slavic prefixes and prepositions constitute a single category \( P \)
- Slavic prefixes can be divided into VP-internal and -external ones with the former being resultative (and hence telicers) and the latter fulfilling certain adverbial functions
- Slavic predicates containing either goal or source prefixes are telic since the particular prefixes are internal and thus identify the result state subevent
- asymmetries between sources and goals are not aspectual in nature
- the particular asymmetry between Czech source and goal prefixes (i.e. only source- but not goal-prefixed predicates can combine with measure phrase modifiers) is due to different topological properties of the particular result states
- different PP-internal structure for goals and sources?
7 IS THERE A DIFFERENCE IN THE WAY GOALS AND SOURCES RELATE TO THE EVENT IN GERMANIC?

Nam (2004)

(54) **goal PPs**, e.g. *John swam to the boat*.

a. E0: Transition
   E1: Process E2: State
   [john SWIM] [john BE-AT the-boat]

b. \[ VP1 DP1 \[ V1' V1 \[ VP2 \[ V2' (DP2) V2 PP_G \] \] \] \]

(55) **source PPs**, e.g. *John swam to the boat from the beach*.

a. E0: Transition
   E1: Process E2: State
   MOD E1 [john BE-AT the-boat]
   [from the beach] [john SWIM]

b. \[ VP1 DP1 PP_S \[ V1' V1 \[ VP2 \[ V2' (DP2) V2 \] \] \] \]

(56) **non-directional PPs**, e.g. *John swam to the boat in the lake*.

a. MOD E0: Transition
   [john SWIM-ACT] [john BE-AT the-boat]

b. \[ VP1 PP_ND \[ VP1 DP1 \[ V1' V1 \[ VP2 \[ V2' (DP2) V2 \] \] \] \] \]

7.1 Nam’s claim: prepositions that are ambiguous between a locative and a directional reading such as *under*, *behind*, *in* and *on* are exclusively goal-oriented when directional

**contra** (see also Thomas 2001, 2003; Folli & Ramchand to appear):

⇒ goal readings with all of these Ps readily available only with resP verbs (e.g. *jump, kick, put, fall, throw*) but not with more general motion verbs like English and Dutch *run / rennen, crawl / kruipen, walk / lopen, swim / zwemmen, go / gaan, drive / rijden* (57)

⇒ German: all of these Ps only goal-oriented with accusative case (59), (63)

⇒ English *under, behind*: (unless with resP verbs) never goal but only trajectory reading (57) a.

⇒ Dutch *under, behind*: (unless with resP verbs) only locative; trajectory reading with additional postpositional element *door* ‘through’ (58)

⇒ *in, on*: goal reading only postpositionally (Dutch) / with additional *to* (English) (60), (61), (62)

(57) a. *The plane flew under the bridge.*
   (locative / trajectory) English

b. *Sharon kicked the ball under the chair.*
   (goal)

(58) a. *Het vliegtuig vloog onder de brug.*
   (only locative) Dutch

b. *Het vliegtuig vloog onder de brug door.*
   (only trajectory)

c. *Het vliegtuig vloog de brug onder.*
   (*directional)
None of the English or Dutch locative prepositions can have a goal reading in isolation.

The only asymmetry between goals and sources: Dutch postpositional PPs, English PathPs headed by *to* and German accusative PPs always get a goal but never a source interpretation.

Goal reading needs extra marking (movement, additional structure, and/or case).

The data rather suggest a PP-internal difference between locative PPs and directional-goal PPs.

A PP-external difference between sources and goals (affecting the way in which the PPs are linked to the event) is not deducible from these data.

### 7.2 Nam’s claim: In Dutch, pied-piping and PP-over-V mvt is possible with sources but not with goals

4 The grammatical and directional version is *zij zijn het bos in gelopen.*
(66) a. Willemijn loopt van een brug.
    Willemijn walks from a bridge
b. Willemijn loopt van een brug af.
    Willemijn walks from a bridge off
c. Gert Jan springt van een brug.
    Gert Jan jumps from a bridge

(67) a. Anca en Shakuntala zijn gelopen van Amsterdam.
    Anca and Shakuntala are walked from Amsterdam
    ‘Anca and Shakuntala walked from Amsterdam.’
b. Anca en Shakuntala zijn gelopen van Amsterdam naar Utrecht.
    Anca and Shakuntala are walked from Amsterdam to Utrecht
    ‘Anca and Shakuntala walked from Amsterdam to Utrecht.’

(68) a. *Welke stad uit ben jij vertrokken?
    which city out are you departed
    ‘Which city did you depart from?’
b. *Welk bos uit ben jij gelopen?
    which forest out are you walked
    ‘Which forest did you walk out of?’

(69) a. Welk bos in / uit ben jij komen lopen?
    which forest in / out are you come.PRT walk.INF
    ‘Which forest did you walk into / out of?’
b. In / uit welk bos ben jij komen lopen?
    in / out which forest are you come.PRT walk.INF

(70) a. Kriszta en Giorgos *zijn / #hebben gelopen in het bos.
    Kriszta and Giorgos *are / have walked in the forest
    ‘Kriszta and Giorgos walked in*(to) the forest.’
b. #Kriszta en Giorgos zijn gelopen uit het bos.
    Kriszta and Giorgos are walked out the forest
    ‘Kriszta and Giorgos walked out of the forest.’

- asymmetry between Dutch in and uit in the availability of a directional reading (see auxiliary selection)?

alternative question: which Ps can appear postpositionally and which ones cannot?
- onder ‘under’, over ‘over’, achter ‘behind’ cannot appear in postposition
- in ‘in’, op ‘on’, uit ‘out’ can appear in postposition
- exclusively directional PPs containing source-oriented van ‘from’ as well as goal-oriented naar ‘to(wards)’
  cannot appear postpositionally
- Can only those Ps appear in postposition that are (homophonous to) particles? (see den Dikken 2003)

7.3 Nam’s claim: Dutch goal Ps, but not source Ps can incorporate into V

(71) a. ... dat zij de jas over de stoel hebben heen gelegd
    that they the jacket over the chair have down put
    ‘... that they put the jacket over the chair’
b. ... dat dit boek (van) onder het bed is (vandaan) gekomen
    that this book (from) under the bed is (?*vandaan) come
    ‘... that this book disappeared from under the bed’

contra: these are not minimal pairs
- contrast rather between morphologically simple and complex particles (see also Koopman 1997, den Dikken 2003)
- simple goal and source particles behave alike
interim summary for Dutch:

- there is no general syntactic asymmetry between Dutch goal and source PPs
- all asymmetries that Nam addressed can be derived from other asymmetries (morphologically simple vs. complex particles, prepositional phrases vs. postpositional phrases and particles)
- postpositional phrases can involve both sources and goals (zie zijn het bos in / uit komen lopen ‘they walked into / out of the forest’)
- there are both source and goal PPs that cannot appear postpositionally (*zie zijn de winkel van / naar gelopen ‘they walked from / to the store’)

open issues:

- which Ps can appear on postposition: only those that are (homophonous to) particles?
- difference between from / van and other source Ps
- difference between in and uit, where a directional reading is more easily available with the latter

7.4 Nam’s claim: English prepositional (pseudo-) passive ok with goals but not with sources

contra (data from Couper-Kuhlen 1979):

- there are prepositional passives with both source and goal Ps (74)
- there are cases where the prepositional passive is out with goal Ps (75)
- there are prepositional passives with ‘atelic’ (non-resultative) PPs (76)
Act towards others as you would be acted towards.

a. The prison was run from.
   b. The store can be run out of.
      This boat may not be jumped out of.
      The house was moved out of.

→ it is unclear what governs the possibility of deriving prepositional passives (not restricted to goal Ps, resultative Ps, Ps that can be used as particles, nor argument PPs, see also Abels 2003)
→ the data from prepositional passives do not support Nam’s claim of a syntactic goal-source asymmetry

### 7.5 Nam’s claim: English goal PPs are oriented to object arguments, source PPs to subject arguments

a. John loaded the hay from the ground onto the truck.
   b. John loaded the hay onto the truck from the ground.

most natural reading of a.: from the ground refers to the position of the hay (irrelevant where John is)
most natural reading of b.: from the ground specifies the position of John (different intonation: could also refer to the position of the hay)
→ from the ground in a. forms a complex predicate with onto the truck and only modifies the internal argument (contra Nam)
→ Nam’s claim seems correct for b.; however: a source PP and a goal PP can form a complex PP, modifying the same element iff both paths can be concatenated – the second path has to start where the first path ends
→ concatenation is only possible if the source path precedes the goal path but not vice versa
→ the particular source PP does not denote a cumulative path (recall (23)): a set of paths is cumulative iff two elements from this set can be concatenated and the sum of these is still in the same set. Here, though we concatenated a path from one set with a path from another set.
→ contra Nam: both these sub-paths modify one and the same domain
→ open question: why can goal-PPs not be VP-external modifiers (contra from-phrases)?

### 7.6 Nam’s claim: English predicates containing goal PPs are complex, telic events (transitions), those containing source PPs are simple atelic events (processes)

a. John drove to New York again. ambiguous
   b. John drove from New York again. repetitive

###contra:

a. Nino drove away from Aix-en Provence again. ambiguous / repetitive
   b. Nino sent Cem away again. ambiguous
   c. Nino went away again. ambiguous
   d. ??Nino drove from Aix-en Provence.

###(81)

a. Jakub drove towards Groningen again. repetitive
   b. Jakub drove to Groningen again. ambiguous

###(82)

a. Anna ran towards the store *in / for ten minutes. ambiguous
   b. Anna ran away from the car ???in / for ten minutes.
   c. ???Anna ran from the car.

###contra:

a. Janneke ran to the store in / *for ten minutes.
   b. Janneke ran away in / *for ten minutes.

→ difference between preposition from and particle away
→ difference between Germanic particle away (+ from-phrase) and Slavic internal prefix u- ‘away’ (+ ot / od-phrase) wrt temporal adverbial test
CONCLUSIONS

There are undoubtedly asymmetries between goals and sources, at least at the conceptual level. However, these do not manifest themselves PP-externally, i.e. in the way they relate to the event structure. Rather, these asymmetries are PP-internal or maybe even just conceptual in nature. Hence, they are also not aspectual and do not affect the telicity status of the event itself. The apparent differences between sources and goals that Nam relies on to argue in favour of an aspectual difference between goals and sources are deducible from other asymmetries that are not aspectual in nature. These include directional vs. locative Ps, prepositions vs. postpositions, arguments vs. adjuncts and maybe even PPs (or transitive Ps) vs. particles (intransitive Ps).

open issues:

- which Dutch Ps can appear in postposition: only those that are (homophonous to) particles?
- difference between from / van and other source Ps: Why are bare from / van-phrases dispreferred?
- difference between Dutch in and uit, where a directional reading is more easily available with the latter
- Why do under / behind differ from in / on in the availability of a directional reading?
- Why can only from-phrases appear as VP-external modifiers?
- What happens when the verbs do not have a resP and (a)telicity results from the homomorphism between the event and the scale provided by the PP?
- Why is the parallel between Slavic internal prefixes and English particles not perfect (recall temporal adverbials data in (83) b.)?

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