

Aspectual Interpretation of the Bi-aspectual Verbs in Czech

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Aspect in Czech

- standard verb is either entirely perfective or entirely imperfective in all tenses and forms

imperfective:

kopat (to kick)

kope (he/she kicks)

kopal (he/she kicked)

...

perfective:

kopnout (to kick)

kopne (he/she will kick)

kopnul (he/she kicked)

...

- perfective: focus a situation in its entirety, including both initial and final endpoints
- imperfective: focus part of a situation, including neither initial nor final endpoints (Smith, 1993)

Bi-aspectual verbs

- specific class of verbs which can express both perfective or imperfective aspect
- mostly borrowed, with suffix -ova-
- testing bi-aspectuality (Veselý, 2008)
 - perfective verb could not form a periphrastic future tense form
Petr bude opravovat dům. *Petr bude opravit dům. Petr bude renovovat dům.
„Petr will reconstruct/renovate a house“
 - imperfective verb could not be used in a present tense form in a temporal clause with *až*
*Až opravuje dům, postaví další. Až opraví dům, postaví další. Až renovuje dům, postaví další.
„When he/she will renovate/reconstruct a house, he will build another one.“

Our research

- Basic principle:

- When used in a particular utterance, bi-aspectual verbs are interpreted as either perfective or imperfective, but not „bi-aspectually“. (Janda, 2004)

Pepa renov-uj-e byt.

Pepa renovate-PRS-SG flat.ACC.SG imperfective?

Pepa rezign-ova-l.

Pepa resign-PST-SG. perfective?

- General research question

- Which factors influence the aspectual interpretation of bi-aspectual verbs in Czech?

Experiment 1: tense

- Participants
 - N = 60 students of the Charles University in Prague (mean age 22.12 years)
 - randomly divided to two groups (30 people each) and each group filled out a different questionnaire
 - all participants filled out a questionnaire in the same room before a lecture took place
- Hypotheses
 - If a bi-aspectual verb is used in present tense form, it will be interpreted as imperfective.
 - If a bi-aspectual verb is used in preterite form, it will be interpreted as perfective.

Experiment 1: tense

- Method

- two questionnaires; both contained 14 sentences, each of them comprised of 3 to 4 loanwords and some domestic Czech words
- one of the loanwords was always a bi-aspectual verb
- identical sentences in both questionnaires; difference only in the tense of the verb: in each questionnaire, there were 7 verbs in preterite form and 7 verbs in present tense form
- task: “reformulate each sentence”, i.e. substitute all the loanwords with Czech domestic words and keep the meaning of the sentence roughly identical at the same time
- verbs analyzed: *mobilizovat, demonstrovat, dešifrovat, rezervovat, explodovat, renovovat, skórovat, nominovat, emigrovat, realizovat, rezignovat, expandovat, identifikovat, detoxikovat*

Experiment 1: tense

- Analysis based on the assumption of substitutional equivalence
 - If the speaker chose to substitute the original verb with a perfective verb, it was counted as perfective (and reversely).
 - If the speaker chose to substitute the original verb with a different bi-aspectual verb (e.g. *nominovat* > *jmenovat*) or with a semantically different verb (e.g. *detoxikovat* > *otrávit*) or did not to substitute the original verb at all, it was discarded.
- Example
 - *Firma expandovala do industriální sféry.*
 - „*The company expanded / was expanding / has been expanding to industrial sphere.*“
 - a) ... *pronikla* ...; b) ... *pronikala* ...

PRESENT TENSE	Perfective	Imperfective	Discarded
mobilizovat	3	24	3
demonstrovat	0	30	0
dešifrovat	2	26	2
rezervovat	6	16	8
explodovat	19	9	2
renovovat	0	26	4
skórovat	1	10	19
nominovat	2	19	9
emigrovat	0	29	1
realizovat	0	27	3
rezignovat	9	13	8
expandovat	0	26	4
identifikovat	1	25	4
detoxikovat	0	28	2

PAST TENSE	Perfective	Imperfective	Discarded
mobilizovat	26	1	3
demonstrovat	19	10	1
dešifrovat	27	2	1
rezervovat	29	0	1
explodovat	28	0	2
renovovat	12	15	3
skórovat	21	0	9
nominovat	17	1	12
emigrovat	14	12	4
realizovat	29	0	1
rezignovat	28	0	2
expandovat	27	1	2
identifikovat	28	0	2
detoxikovat	23	6	1

Experiment 1: tense

- Generalized linear mixed model

FIXED EFFECTS	Estimate (SE)	p
Intercept	4.592 (0.866)	< 0.001
Tense (present)	-6.795 (0.564)	< 0.001
Durativity (yes)	-2.336 (1.092)	< 0.05

RANDOM EFFECTS	Variance	Standard Deviation
Verb	3.529	1.879
Subject	0.367	0.606

Experiment 1: tense

- Interpretation
 - tense of the verb strongly influences the aspectual interpretation of the verb
 - durative and instantaneous verbs tend to behave differently
- We did not control for subject and object number
 - 5 sentences with plural object, 4 with singular object (and 5 intransitive)
 - 9 sentences with singular subject, 5 with plural subject
 - potential problem for the results

Experiment 2: subject number

- Participants
 - N = 121 students of the Charles University in Prague
 - randomly divided to four groups (N = 31, 30, 28, 32) and each group filled out a different questionnaire
- Method
 - the same as experiment 1
 - subject number was also controlled – each verb was used twice in preterite tense (1x plural subject, 1x singular) and twice in present tense (1x plural subject, 1x singular)
 - object was always in singular form

PRESENT TENSE, SINGULAR SUBJECT	Perfective	Imperfective	Discarded
mobilizovat	1	25	5
demonstrovat	0	28	3
dešifrovat	5	20	6
rezervovat	17	6	8
explodovat	24	2	5
renovovat	0	31	0
skórovat	0	20	11
nominovat	6	7	18
emigrovat	13	13	5
realizovat	0	31	0
rezignovat	5	16	10
expandovat	1	23	7
identifikovat	7	17	7
detoxikovat	1	27	3

PRESENT TENSE, PLURAL SUBJECT	Perfective	Imperfective	Discarded
mobilizovat	0	25	2
demonstrovat	0	26	3
dešifrovat	3	19	7
rezervovat	6	18	7
explodovat	3	21	4
renovovat	0	28	2
skórovat	3	16	6
nominovat	5	14	12
emigrovat	4	23	0
realizovat	0	27	3
rezignovat	4	21	6
expandovat	0	30	2
identifikovat	5	18	5
detoxikovat	1	25	1

PAST TENSE, SINGULAR SUBJECT	Perfective	Imperfective	Discarded
mobilizovat	25	0	3
demonstrovat	17	10	1
dešifrovat	31	0	1
rezervovat	27	0	0
explodovat	29	0	1
renovovat	14	16	0
skórovat	20	1	10
nominovat	18	0	9
emigrovat	29	0	0
realizovat	29	0	2
rezignovat	31	0	0
expandovat	26	0	2
identifikovat	30	0	0
detoxikovat	20	5	3

PAST TENSE, PLURAL SUBJECT	Perfective	Imperfective	Discarded
mobilizovat	29	2	1
demonstrovat	9	9	9
dešifrovat	25	0	5
rezervovat	27	0	2
explodovat	31	1	0
renovovat	9	18	1
skórovat	20	0	8
nominovat	18	0	11
emigrovat	30	1	1
realizovat	25	0	1
rezignovat	30	0	0
expandovat	28	0	1
identifikovat	32	0	0
detoxikovat	18	4	3

Experiment 2: subject number

- Generalized linear mixed model

FIXED EFFECTS	Estimate (SE)	p
Intercept	6.316 (0.855)	< 0.001
Tense (present)	-8.031 (0.602)	< 0.001
Subject (sg)	1.083 (0.247)	< 0.001
Durative (yes)	-4.064 (0.991)	< 0.001

RANDOM EFFECTS	Variance	Standard Deviation
Verb	2.838	1.685
Subject	1.434	1.198

Experiment 2: subject number

- Results

- verb tense does have a strong effect on the aspectual interpretation
- subject number is also a significant factor (mostly for present tense)
 - if there is a plural subject, we can see a tendency for an imperfective interpretation
- also, durativity of the verb seems to have a strong effect on the aspectual interpretation
 - instantaneous verbs tend to be interpreted more perfectly in the present form
 - some durative verbs tend to be interpreted more imperfectively in the past tense form

Future work

- current problems
 - few verbs analyzed
 - we need to get data for more bi-aspectual verbs
 - other possible factors
 - object number, word-order, other grammatical forms (passive etc.)
- offline testing
 - currently testing the online processing of bi-aspectual verbs
 - self-paced task

Soudní lékař identifikoval oběť vraždy, **dokud** policie nenašla její příbuzné.

Soudní lékař identifikoval oběť vraždy, **protože** policie nenašla její příbuzné.

Self-paced task example

Soudní _____

Self-paced task example

_____ lékař _____

Self-paced task example

_____ idetifikoval _____

Self-paced task example

_____ oběť _____

Self-paced task example

_____ vraždy, _____

Self-paced task example

_____ dokud _____

Self-paced task example

_____ policie _____

Self-paced task example

_____ nenašla _____

Self-paced task example

_____ její _____

Self-paced task example

_____ příbuzné.