Prague Dependency Treebank: Annotation of Surface Syntax

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### Auxiliary Verbs

<table>
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<th>syntactic core of (surface) sentence</th>
<th>copula</th>
<th>轻动词</th>
<th>modal verbs</th>
<th>phase verbs</th>
<th>full/lexical/autosemantic verbs</th>
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</thead>
<tbody>
<tr>
<td>semantic core</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| morphology                          |        |       |             |             |                             |

| afun (main clause)                  |        |       |             |             |                             |

- John is preparing his homework.  
- Byl by přišel včas.
- John has been attending the school since 2011.  
- Bude chodit včas.
Copula

• a word used to link the subject of a sentence with a predicate
• semanticaly empty, but syntactic center

  Mary and John are my friends.
  The sky was blue.
  I am taller than most people.
  The birds and the beasts were there.
Copula

• a word used to link the subject of a sentence with a predicate
• semanticaly empty, but syntactic center
  
  Mary and John are my friends.
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  The birds and the beasts were there.

• it expresses
  • identity … The Morning Star is the Evening Star.
  • membership of a class or a subset relationship … She was a nurse.
  • express some property, relation or position, permanent or temporary:
    The trees are green.
    I am your boss.
    John was in England.
    The children are confused.

• main/principal copula …. typically (equivalent of) "to be"
  
  plus "verbs equivalent in function to the principal copula, the verb "be"
  
  → no clear cut between copular verbs and full verbs
A verb is said to have a copular complementation when it is followed by a subject complement or a predicational adjunct, and when this complement cannot be dropped without changing the meaning of the verb. The verb in such a clause is a copular (or linking) verb, and is equivalent in function to the principal copula, the verb be.

**current copulas** (typically stative):
(i) be (friendly) (my friend)
(ii) appear (happy) (the only solution)
feel (annoyed) (a fool)
look (pretty) (a fine day)
seem (very restless) (a genius)
smell (sweet)
sound (surprised) (a reasonable idea)
taste (bitter)
(iii) remain (uncertain) (good friends)
keep (silent)
stay (motionless)

**resulting copulas**:
(iv) become (older) (an expert)
become (friendly) (my friend)
end up (happy) (her slave)
get (ready)
go (sour)
grow (tired)
prove (rather useful) (his equal)
turn (cold) (traitor)
turn out (fortunate) (a success)
wind up (drunk) (a millionaire)
Copula in Czech

Czech ling. tradition:
Sponová slovesa se využívají v přísudku slovesně-jmenném (přísudek jmenný se sponou), kde jsou doplněna jménem.
Mezi sponová slovesa patří být, bývat, stát se, stávat se a v záporu nebýt, nebývat, nestat se a nestávat se.
   Marta je nemocná.
   Simona bývala učitelkou.
   Petr se stal lékařem.
   (jiné též mít, zůstat, zdát se)
Copula in data (Czech and English)

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Copula in **HamleDT** for Czech
(PDT vs. UDs, version 1)

PML-TQ query:

```plaintext
a-node $pred :=
    [id ~ "prague", depth() = "1",
     1x a-node [ afun = "Pnom",
               ],
    ]
>> for $pred.lemma give $1, count()
>> sort by $2 desc
```

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Copula in **HamleDT** for Czech (PDT vs. UDs, version 1)

http://lindat.mff.cuni.cz/services/pmltq/#!/home

<table>
<thead>
<tr>
<th>lemma</th>
<th>count</th>
</tr>
</thead>
<tbody>
<tr>
<td>být</td>
<td>7974</td>
</tr>
<tr>
<td>bývat</td>
<td>41</td>
</tr>
<tr>
<td>:</td>
<td>37</td>
</tr>
<tr>
<td>a</td>
<td>10</td>
</tr>
<tr>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>či</td>
<td>2</td>
</tr>
<tr>
<td>=</td>
<td>2</td>
</tr>
<tr>
<td>bývávat</td>
<td>2</td>
</tr>
<tr>
<td>respektive</td>
<td>1</td>
</tr>
<tr>
<td>,</td>
<td>1</td>
</tr>
<tr>
<td>totiž</td>
<td>1</td>
</tr>
</tbody>
</table>
Copula for English in UDs, version 1

PML-TQ query:

\[
\begin{align*}
\text{a-node } \$\text{cop} & := \{ \text{deprel} = "\text{cop}" \} \\
\text{>> for } \$\text{cop.lemma} \text{ give } \$1, \text{ count()} \\
\text{>> sort by } \$2 \text{ desc}
\end{align*}
\]
Copula for English in UDs, version 1

http://lindat.mff.cuni.cz/services/pmltg/#!/home

<table>
<thead>
<tr>
<th>copula</th>
<th>count</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>be</td>
<td>5598</td>
<td>This is one thought-provoking film.</td>
</tr>
<tr>
<td>`s</td>
<td>8</td>
<td>&quot;Yo Mama’s so fat ....&quot;</td>
</tr>
<tr>
<td>'</td>
<td>1</td>
<td>&quot;so, enemy, what's your point?&quot;</td>
</tr>
<tr>
<td>b</td>
<td>1</td>
<td>&quot;o and the cheaper the better (we are trying to save money now, sooo..thatd b helpful) thanks&quot;</td>
</tr>
</tbody>
</table>
Copula for Czech in UDs, version 1

<table>
<thead>
<tr>
<th>lemma</th>
<th>count</th>
</tr>
</thead>
<tbody>
<tr>
<td>být</td>
<td>20 480</td>
</tr>
<tr>
<td>bývat</td>
<td>110</td>
</tr>
<tr>
<td>stát</td>
<td>3</td>
</tr>
<tr>
<td>bývávat</td>
<td>3</td>
</tr>
<tr>
<td>moci</td>
<td>1</td>
</tr>
<tr>
<td>mít</td>
<td>1</td>
</tr>
</tbody>
</table>
"Doplněk" ~ verbal attribute
"Doplněk" ~ verbal attribute

Complement (verbal attribute) ... analytical functions:
- modifies two sentence members, verb and noun

chlapec ležel nemocen, viděl ho nemocného
[boy – lay – ill] [he – saw – him – (being) ill]

we - Aux - came - glad
we were glad to come

money - he-has - deposit
he has put the money on a deposit

přišli

rác

peníze

uložený

uvařeno

she-has – cooked
he has done cooking

příběhl

bos
"Doplněk" in HamleDT for Czech (PDT vs. UDs, version 1)
"Doplněk" in HamleDT for Czech (PDT vs. UDs, version 1)
"Doplněk" in HamleDT for Czech (PDT vs. UDs, version 1)
Complex sentences

- **main clause** (= independent clause) vs. **non-main clause**
- **relative clause** … syntactic function: Attribute
  
  *The Ferrari [which I can't afford _].*
  
  *I imagined the house where I want to live.*
  
  • starting with a relative pronoun or relative adverb

- **dependent clause** … either modify the main clause of a sentence or serve as a component of it (plus recursivity!!)
  
  … syntactic function: Object or Adverbial
  
  • starting with a subordinating conjunction (that, if, whether, in order that)
    
    *I know (that) he is here.*
  
  • starting with an interrogative pronoun or relative adverb
    
    *I know who said that.*
    
    *I know where he wanted to go.*
References


• Manual for Analytical Annotation

• PML-TQ and repository
  http://lindat.mff.cuni.cz/services/pmltq/#!/home