Valency
in the Prague Dependency Treebank

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Valency in PDT / PCEDT: Outline

- concept of valency
  as the keystone for syntactic structure

- valency in PDT and PDT-Vallex
  valency in PCEDT and EngVallex, CzEngVallex
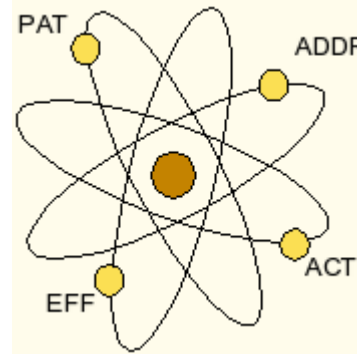
documentation:
PDT: http://ufal.mff.cuni.cz/pdt2.0/doc/manuals/en/t-layer/html/index.html
PCEDT: https://ufal.mff.cuni.cz/pcedt2.0/en/documentation.html

Concept of Valency

- valency … Tesnière (1959)
  - syntactic structure
  - semantic structure
  ⇒ dependency syntax ≈ valency syntax

Concept of Valency

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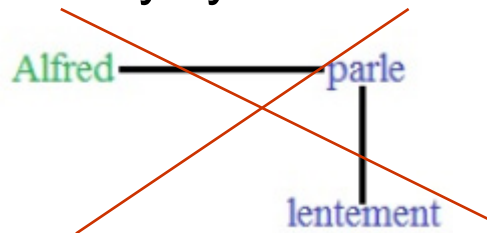 - syntactic structure
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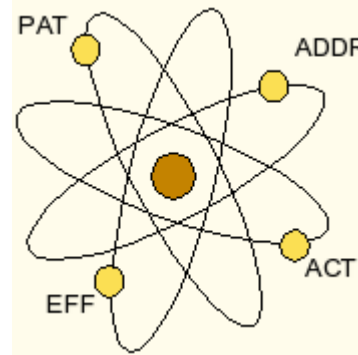➡ dependency syntax ≈ valency syntax

  - binary division

Alfred parle lentement
'Alfred speaks slowly'

  - verb centrality

stemmas
= diagrammatic representations

Filius amat patrem
'(The) son loves (the) father'

PDT: t-layer – valency as a keystone

Concept of Valency

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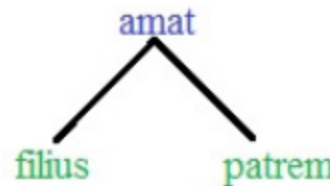 - semantic structure
  ⟹ dependency syntax ≈ valency syntax
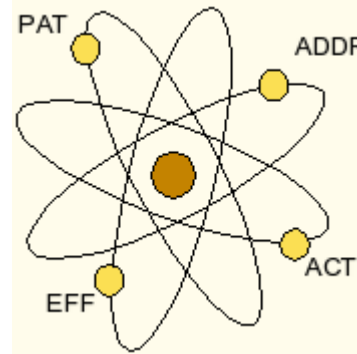
stemma
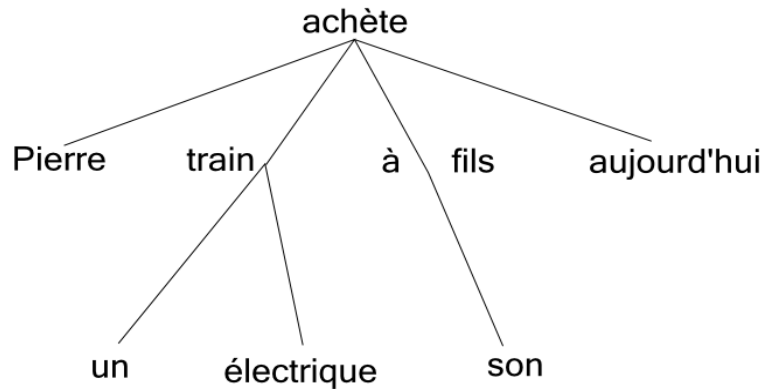
Aujourd'hui Pierre achète à son fils un train électrique.
Today Pierre is buying his son an electric train.

Concept of Valency

- Concise Oxford Dictionary of Linguistics (Matthews, 1997):
  valency *– the range of syntactic elements either required or specifically permitted by a verb or other lexical unit ...*
- Svozilová et al. (1997):
  „Valencí rozumíme v lingvistice schopnost lexikální jednotky, především slovesa, vázat na sebe jiné výrazy a mj. tak zakládat větné struktury."
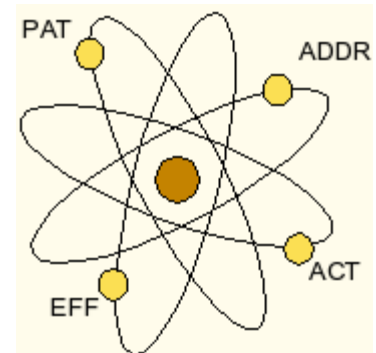
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Stát vyplatil restituentům miliony za zabavený majetek /
The state paid the restituents millions for condemned property

Státem byly vyplaceny restituentům miliony /
Restituentům se vyplatily miliony /
Millions were paid to the restituents for condemned property

Stát nechal vyplatit restituentům miliony /
The state had the millions paid to the restituents

Restituenti dostali vyplaceny miliony /
The restituents got millions paid out

vyplatit / pay (out)

Actor   Addressee   Patient   Effect
state   restituents   millions   property

PDT: t-layer – valency as a keystone

Valency Stored in Valency Dictionaries

- valency structure of lexical units

vyplatit / to pay …	Actor Addressee Patient (Effect)
spát / to sleep	Actor
sídlit / to reside	Actor Location
pršet / to rain	– ('dummy subject')

⟹ valency dictionaries:

number and type of valency dependents

Valency Stored in Valency Dictionaries

- valency structure of lexical units

⟹ valency dictionaries:
number and type of valency dependents

- prototypically: a single valency structure ≈ a single word sense

odpovídat₁	… Actor Addressee (Patient) Effect
	≈ dávat odpověď [to answer]
odpovídat₂	... Actor Patient Effect
	≈ reagovat [to react, to respond]
odpovídat₃	... Actor (Addressee) Patient
	≈ mít odpovědnost [to be responsible]
odpovídat₄	... Actor Patient
	≈ být ve shodě [to correspond, to meet]

Valency Stored in Valency Dictionaries

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$admit_1$ …   Actor Patient
              This admits of two possibilities.
              ≈ to concede   (připustit/připouštět, dovolit/dovolovat)

$admit_2$ …   Actor Patient Location
              She was admitted to the hospital.
              ≈ to take   (přijmout/přijímat, umístit/umísťovat)

⟹   valency lexicon as an *inventory of word senses*

Prominent Examples of Valency Theories

- syntactically based:
  - Lucien Tesnière (1959) … actants (first / non-first) and circumstants
  - PropBank … arguments (Arg0, Arg1, …) and modifiers (ArgM)

Prominent Examples of Valency Theories

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- semantically based:
  - Charles J. Fillmore (1968)

  deep cases: Agentive, Objective, Locative, Instrument, Dative, … (the list differs)

  case frame … each verb selects a certain number of deep cases

  The door (O) opened.
  The janitor (A) opened the door (O).
  This key (I) opened the door (O).
  The janitor (A) opened the door (O) with this key (I).

  to open … +[__O (I) (A)]

  grammatical functions are determined by the deep valence of the verb

HOWEVER: FrameNet   http://framenet.icsi.berkeley.edu

- verbs (and other units) evoke a semantic frame (SF)

  buy … SF Commerce_buy   Buyer, Goods (core semantic elements)
  Seller, Money, …

PDT: t-layer – valency as a keystone

Prominent Examples of Valency Theories

- Czech linguistics:

- František Daneš (1981, 1987) … intention vs. valency
    - complex sentence patterns (KVV, komplexní větný vzorec):
        - **grammatical sentence pattern** (GVV, gramatický větný vzorec)
          Karel rozbil *okno*. / *Karel* broke *the window*. $S_{nom} - VF - S_{ak}$
          Otec *mi* řekl, *že nic neví*. / *My father* told *me* *that he knows nothing*.
                              $S_{nom} - VF - S_{dat} - S_{ak}$ / *že* SENT
            obligatory / potential / facultative positions

        - **semantic sentence pattern** (SVV, sémantický větný vzorec) … *microsituation*
          Karel rozbil okno.   AGENS – PRED – PATIENS
          Jan dal Petře knihu. / Jan gave Petra a book ~ Jane gave a book to Petra.
                              AGENS – PRED – RECIPIENT – PATIENS
            two basic types of semantic roles:
              substantive (cz substanční) … physical objects, location, temporal m.
              situational (propositional) … e.g., information

- Jarmila Panevová (1974, 1980, 1994)

Valency in FGD

- mostly syntactic criteria (coarse-grained deep roles)
  - Panevová (1974-5; 1980; 1994; …)
  - lexical words: *verbs*, nouns, adjectives, adverbs
    frame evoking words / frame bearing words

- layers of language descriptions:
  - primarily tectogrammatical layer
    … number, type of dependents
  - reflected also at the surface and morphemic layers
    … morphological form

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	actants (inner participants) (~ arguments)	free modifications (~ adjuncts)
obligatory		
optional (cz fakultativní)		

valency frame

stored in a valency lexicon

Actants vs. Free Modifications

- stress on functional tests:
  - can be the given type of dependent repeated?
  - can the given dependent modify any verb?

NO ⇒ *actants*

Matka.ACT *předělala dětem*.ADDR *loutku*.PAT *z Kašpárka*.ORIG *na čerta*.EFF.
Mother.ACT *remodeled the puppet*.PAT *for children*.ADDR *from Kasper*.ORIG *to a devil*.EFF.

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- additional characteristics of actants:
  - the verb prescribes the form of its actant(s)   (cz rekce)
    *potkat někoho, informovat někoho, myslet na něco/na někoho, soustředit se na něco,
    učit někoho něco/něčemu, odpovídat něčemu;   bát se něčeho, docílit něčeho*
  - semantically more or less indistinct

- empirically: 5 actants for verbs
  Actor (ACT), Patient (PAT), Addressee (ADDR), Origin (ORIG), Effect (EFF)

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YES ⇒ *free modifications*

V Praze.LOC *se sejdeme na Hlavním nádraží*.LOC *u pokladen*.LOC.
In Prague.LOC *we will meet at the Main Station*.LOC. *near the booking office*.LOC.

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- additional characteristics of free modifications
  - semantically more or less homogenous

    Time: he came in time.TWHEN; how long.THL have you been living there?
    Location or Direction: he came home.DIR3; he lives in Prague.LOC
    Manner: how.MANN do you do? he appeared with his girlfriend.ACMP
    Cause: He died of tuberculosis.CAUS; I will not tell you (because …).CAUS

- empirically: over 35 types for verbs

Actants vs. Free Modifications

- actants ~ more or less theta roles / θ-roles
    (Chomsky, Standard Theory; Theory of Government and binding)
  - ~ deep cases (Fillmore, 1968)
  - ~ arguments
  - ~ core dependents in UDs (= subj, obj, iobj)
  - ~ Tesniére: actants

- free modifications ~ adjuncts
  - ~ non-core dependents uín UDs (= obl, adv)
  - ~ Tesniére: circumstants

Obligatory vs. Optional Dependents

- obligatory vs. optional (cz: fakultativní)
- *dialogue test* (Panevová, 1974):
  criterion of obligatoriness for free modification

  A: *Přátelé už přišli.*   A: *Our friends have already come.*
  B: *Kam?*   B: *Where (do they come)?*
  A: **Nevím.*   A: **I don't know.*

  applicable also for actants

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- BUT: possibility not to express a dependent in a surface
  (cz 'vypustitelnost')

- general actant vs. unspecified vs. surface ellipsis

  Byl pochválen {#PersPron.PAT} lit. *(He) was praised* {#PersPron.PAT}
  Jana prodává u Bati {#Gen.PAT} lit: Jana sells at Baťa {#Gen.PAT}
  Vedoucí podniku odcestoval {#Oblfm.DIR1} lit: *The boss of the company left* {#Oblfm}
  Petr a Marie se potkali v Praze {#Rcp.PAT} *Petr and Marie have met in Prague* {#Rcp.PAT}
  Psali to v novinách {#Unsp.ACT} lit: *(They) wrote it in the_newspapers* {#Unsp}

Concept of Shifting for Actants

```
                              Effect
                             /
Actor  ⟵——  Patient  ⟵——  Addressee
                             \
                              Origin
```
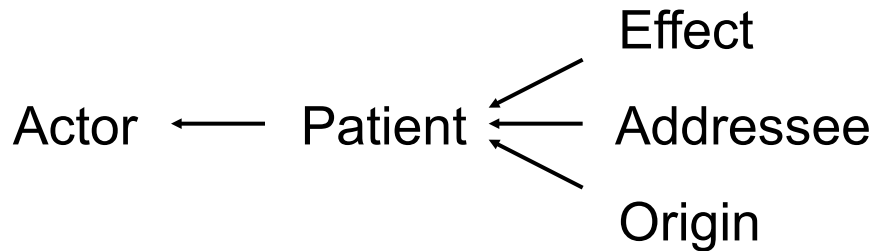
Petr.ACT *přišel.*
Kniha.ACT *již vyšla.*
Jan.ACT *spadl se skály.*

Petr.ACT *krájí cibuli*.PAT*.*
Jan.ACT *oslovil Marii*.PAT*.*
Petr.ACT *vykopal jámu*.PAT*.*
Z banálního nachlazení.PAT *se vyvinulo
         závažné onemocnění*.ACT*.*

Strana.ACT *jej*.PAT *nominovala
          na prezidenta*.EFF*.*
Jan.ACT *vyrostl z jinocha*.ORIG *v muže*.PAT*.*

Petr.ACT *has already come.*
The book.ACT *has already appeared*.
Jan.ACT *fell from the rock.*

Petr.ACT *cuts an onion*.PAT.
Jan.ACT *addressed Marie*.PAT.
Petr.ACT *dug a hole*.PAT.
A serious disease.ACT *has developed
                    from a banal cold*.PAT.

The party.ACT *has nominated him*.PAT
                    for president.EFF.
Jan.ACT *grew from a boy*.ORIG *into a man*.PAT.

PDT: t-layer – valency as a keystone

Valency in FGD: Syntactic and Lexical Derivation

- *verb → deverbal noun*

	"action" usage		"substantival" usage
	SD	SD/LD	LD
létat (to fly)	létání (flying)	let (flight)	letec (pilot)
darovat (to donate)	darování (donation)	dar (donation)	letadlo (airplane)
stavět (to build)	stavení (building)	stavba (building)	letiste (airport)
překládat (to translate)	prekládání (translating)	preklad (translation)	dárce (donator)
			stavitel (constructor)
			prekladatel (translator)

PDT: t-layer – valency as a keystone
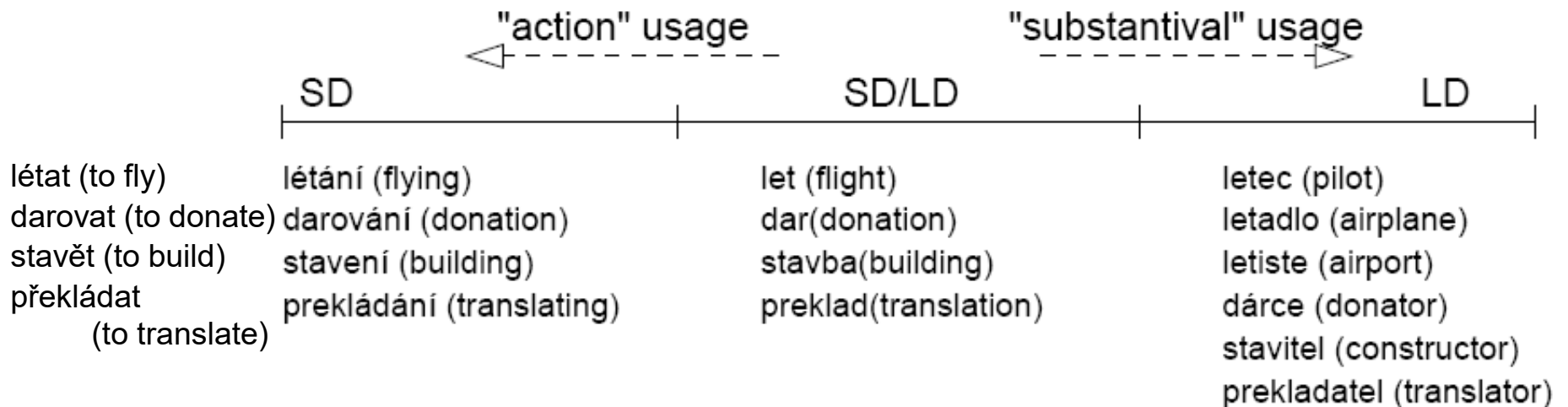
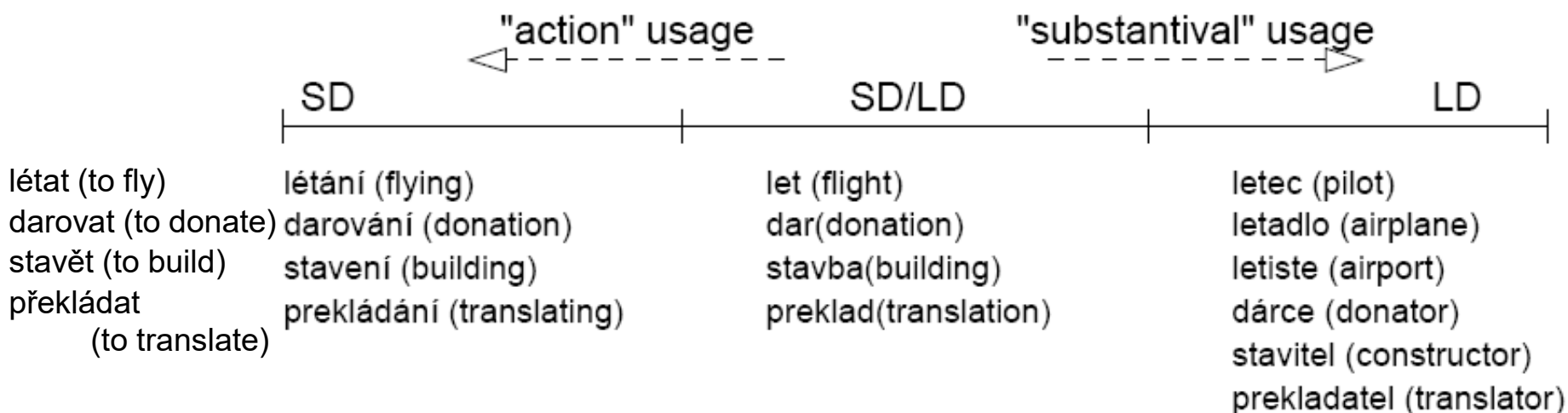# Valency in FGD: Syntactic and Lexical Derivation

- *verb → deverbal noun*
    - valency frame is (somehow) inherited
    - depending on the type of derivation
    - depending on surface form
        - structural cases: Nom, Acc → Gen
        - semantic cases + prep. groups … preserved
    - embedded actants (e.g. *učit* 'teach' ACT PAT ADDR → *učitel* 'teacher' PAT ADDR)

	"action" usage ←	"substantival" usage →	
SD	SD/LD		LD
létání (flying)	let (flight)		letec (pilot)
darování (donation)	dar (donation)		letadlo (airplane)
staveni (building)	stavba (building)		letiste (airport)
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létat (to fly)
darovat (to donate)
stavět (to build)
překládat
    (to translate)

PDT: t-layer – valency as a keystone

Valency in FGD: Syntactic and Lexical Derivation

- *verbs → adjectives*
  - valency frame is (somehow) inherited
  - reduction of one valency position

  dědeček čte *dětem pohádky o princeznách*
  - → *dědeček čtoucí dětem pohádky o princeznách*
  - → *pohádky čtené dědečkem dětem*

  a grandpa is reading fairy tales on princesses to his grandchildren
  - → *a grandpa (who is) reading fairy tales on princesses to his grandchildren*
  - → *fairy tales read by a grandpa to his grandchildren*

  číst [to read] … ACT (PAT) ADDR EFF   →   *čtoucí* … (PAT) ADDR EFF
  →   *čtený* … ACT ADDR

  omezit [to restrict]… ACT PAT (EFF)   →   *omezený [restricted]* … ACT EFF

Valency in FGD: Adverbs

- not studied yet

- *adjectives → adverbs*
  valency frame is inherited

  kolmý na něco [orthogonal to st]   →   kolmo na něco [orthogonally to st]

Valency in PDT / PCEDT: Outline

- concept of valency
  as the keystone for syntactic structure

- valency in PDT and PDT-Vallex
  valency in PCEDT and EngVallex, CzEngVallex
  - functors as labels for actants and free modifications
  - functors for nominal and adjectival dependents
  - functors for non-valency relations

documentation:
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PCEDT: https://ufal.mff.cuni.cz/pcedt2.0/en/documentation.html

Syntactic Information in PDT/PCEDT

- attribute *functor* for *all* nodetypes
- functors … labels for the type of syntactic relation
     governing/parent node – modifying/child node

- complex nodes … functor ~ type of valency dependent
    - actants
    - free modifications
    - verbal complement / secondary predication (Cz: doplněk)

- other nodetypes … functor ~ non-valency relation
    - coordination
    - effective root of an independent clause
    - rhematizers, conjunction modifiers
    - multiword expressions
- (OPER)

Valency in PDT: PDT-VALLEX

- all sem. verbs, some nouns, adjectives, adverbs
  (aspectual counterparts as different units)
- attribute *val_frame.rf* ~ list of frame members
  for each frame member:
  - functor
  - obligatory or optional
  - possible realizations

- consistency checking

- alternations/diatheses !!!

* **odpovídání**
  ACT(.2,.u) PAT(*na-1*[.4]) ADDR(.3) ?EFF(*že*[.v]) v-w2838f1 **Used:** 1x
  (odpovídat- dávat odpověd´) nedokončitelné odpovídání a tázání

* **odpovídat**
  ACT(.1,*že*[.v]) PAT(.3) v-w2839f1 **Used:** 85x
  zaměstnání odpovídá jeho schopnostem
  řešení o. požadavkům
  ACT(.1) ?PAT(*na-1*[.4]) ADDR(.3) EFF(.4,.7*že*[.v],*zda*[.v],*aby*[.v],*at*[.v],.s,.
  v-w2839f2 **Used:** 28x
  odpovídal mu na jeho dotaz, že nemá pravdu
  o. nám na dotazy
  o. pravdu
  o. nám tato slova
  ACT(.1) PAT(*za-1*[.4]) ?ADDR(.3) v-w2839f3 **Used:** 14x
  odpovídáš mi za ztrátu
  svým majetkem.MEANS
  ACT(.1) PAT(*na-1*[.4]) v-w2839f4 **Used:** 2x
  organismus odpovídal na zákrok
  tvorbou.MANN vaziva
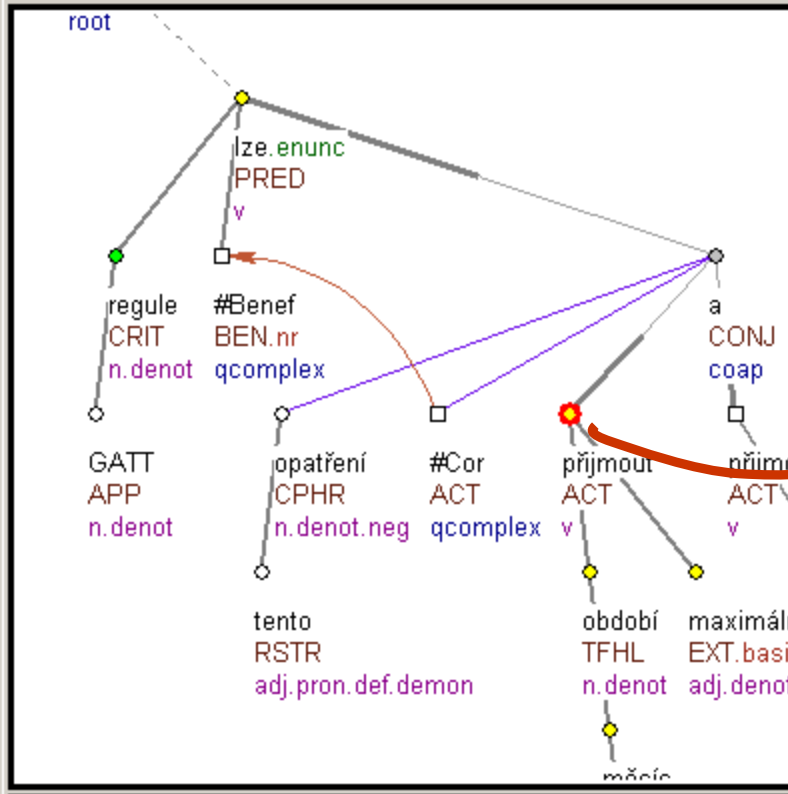 *tímto způsobem.MANN o. na nátlak obyvatelstva*

PDT: t-layer – valency as a keystone

Valency in PDT: PDT-VALLEX (cont.)

PDT-VALLEX	units	frames
verbs	5 300	9 000
nouns	3 750	4 750
adjectives	800	950

Valency in PDT: PDT-VALLEX (cont.)

- a frame element realization ~ a continuous section of an anal. tree
  (may be incomplete)
  - the syntactic structure of a given modification;
  - the requirements (esp. POS characteristics)

ACT(.1) PAT(.4) … transitive verb
ACT(.1) PAT(.f) … infinitive dependent
ACT(.1) PAT(.4) ?ORIG(z-1[.2]) ?EFF(na-1[.4]) … optional actants
ACT(.3) DPHR(mráz.S1,po-1[záda:P6]) … idiom

Examples of surface-form encoding:
nominative: .1
accusative: .4
adjective in instrumental: .a7

possessive pronoun or adjective: .u
numeral: .m
pronoun: .p
adverb: .d
interjection: .i

infinitive: .f
subordinate clause, with any kind of
conjunction: j[.v]
content clause
    (a subordinate clause beginning with a
    relative pronoun/adverb): .c
direct speech: .s

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- regular changes of a surface form:
  - diatheses:
    - passive
    - reciprocity
    - disp. modality
    - resultative
  - other regular changes:
    - numeral constructions
    - distributivity
    - subfunctors
    - ….

Verbs in PDT-Vallex: https://lindat.mff.cuni.cz/services/PDT-Vallex/

Valency in PDT: PDT-VALLEX (cont.)

Verbs in PDT-Vallex:
https://lindat.mff.cuni.cz/services/PDT-Vallex/

PDT-Vallex: search and browse (v1.0)

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odpovídat [Search]

odpovídat

odpovídat^1$_{14x, 3x}$ **ACT**$_{(1)}$ **PAT**$_{(za+4)}$ **?ADDR**$_{(3)}$

(být zodpovědný, zodpovídat) • *odpovídáš mi za ztrátu; svým majetkem.MEANS*

odpovídat^2$_{85x, 51x}$ **ACT**$_{(1;\downarrow že)}$ **PAT**$_{(3)}$

(shodovat se) • *zaměstnání odpovídá jeho schopnostem; řešení o. požadavkům*

odpovídat^3$_{2x, 8x}$ **ACT**$_{(1)}$ **PAT**$_{(na+4)}$

(reagovat, odpovědět) • *organismus odpovídal na zákrok; tvorbou.MANN vaziva; tímto způsobem.MANN o. na nátlak obyvatelstva; USA o. kladně.MANN na demokratické reformy na Kubě*

odpovídat^4$_{2x}$ **ACT**$_{(1)}$ **ADDR**$_{(3)}$ **?PAT**$_{(na+4)}$ **BEN**$_{()}$|**MANN**$_{()}$|**MEANS**$_{()}$|**ACMP**$_{()}$|**CRIT**$_{()}$|**CPR**$_{()}$

• *odpovídala jim na dotazy takto i čtvrtý den; o. mu úsměvem*

odpovídat^5$_{28x, 19x}$ **ACT**$_{(1)}$ **ADDR**$_{(3)}$ **EFF**$_{(4;7;\downarrow že;\downarrow zda;\downarrow aby;\downarrow ať;.s;\downarrow c)}$ **?PAT**$_{(na+4)}$

(odpovědět, odepisovat) • *odpovídal mu na jeho dotaz, že nemá pravdu; o. nám na dotazy; o. pravdu; o. nám tato slova*

PDT: t-layer – valency as a keystone

Valency in PCEDT: EngVallex

- for each occurrence of a semantic verb in the corpus
- each entry is moreover linked to PropBank
  (and some also to VerbNet entries for comparison)

http://lindat.mff.cuni.cz/services/EngVallex/

EngVallex: search and browse (v0.5 - Beta)

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ask [Search]

Under construction. **TESTING ONLY**

ask

ask[1] **ACT**(sub) **PAT**(to+inf;for[objpp;ving]) **ADDR**(obj1)
- *Argentina will ask creditor banks to halve its foreign debt of $64 billion.*
- *The National Institutes of Health asked for an HHS review of its plan to implant fetal tissue into the brain of a patient suffering from Alzheimers.*

ask[2] **ACT**(sub) **PAT**(obj1;about[objpp;ving;whether+vp];whether+vp;if+v) **ADDR**(obj1; of[objpp])
- *The mathematics section of the widely used California Achievement Test asks fifth graders "What is another name for the Roman numeral IX?"*
- **trace* ask him about this law he tried to pass.*
- *John asked a question of his professor.*

ask[3] **ACT**() **ADDR**() **PAT**() **?AIM**()
- *The company was asking $100 million for an operation said to be loseing about $20 million a year.*

PDT: t-layer – valency as a keystone

Valency in PCEDT: CzEngVallex

- a cross-linguistic comparison of valency behavior: Czech and English verbs

The deletion Dr. Vogelstein found ...
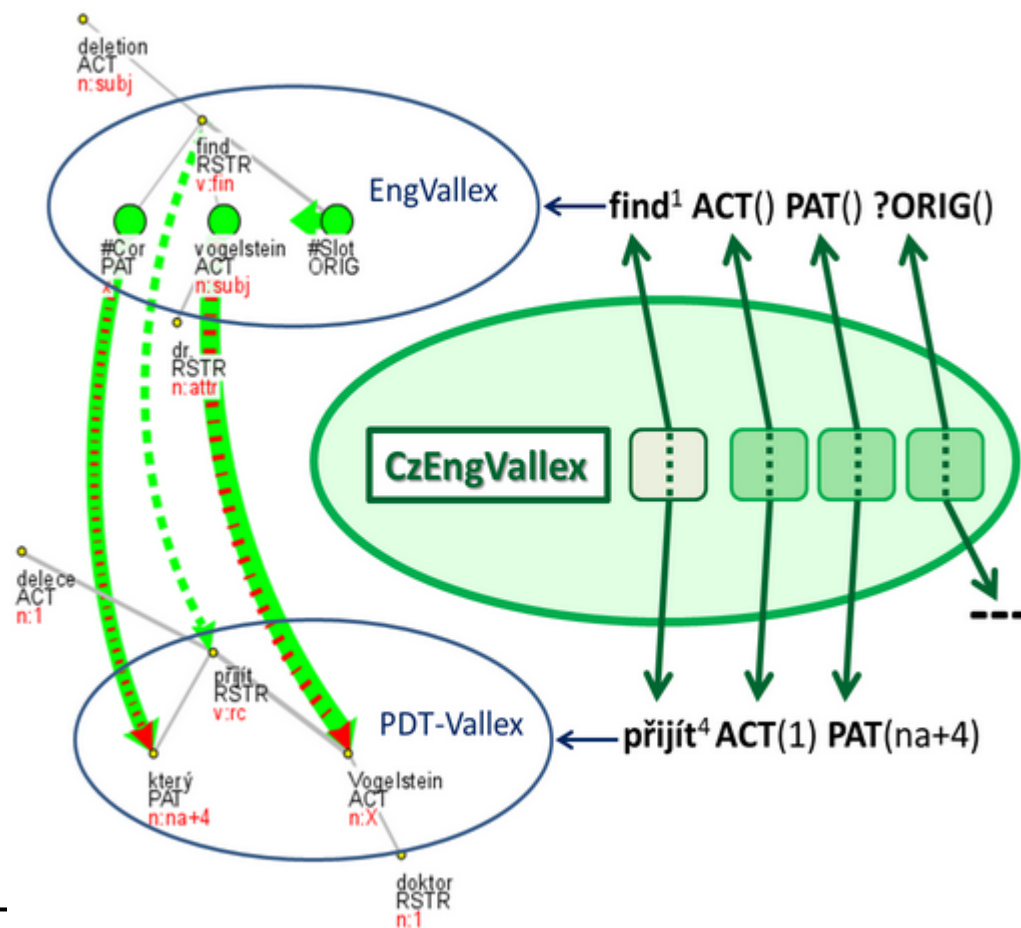
deletion
ACT
n:subj

find
RSTR
v:fin

EngVallex

#Cor
PAT

vogelstein
ACT
n:subj

#Slot
ORIG

dr.
RSTR
n:attr

find¹ ACT() PAT() ?ORIG()

CzEngVallex

---

delece
ACT
n:1

přijít
RSTR
v:rc

PDT-Vallex

přijít⁴ ACT(1) PAT(na+4)

který
PAT
n:na+4

Vogelstein
ACT
n:X

doktor
RSTR
n:1

Delece, na kterou doktor Vogelstein přišel, ...

PDT: t-layer – valency as a keystone

Valency in PCEDT: CzEngVallex

http://lindat.mff.cuni.cz/services/CzEngVallex/CzEngVallex.html

ptát se PDT-Vallex : **ask** EngVallex

ptát se ACT(1) **PAT**(na+4;↓zda;↓jestli;↓c;.s) **ADDR**(2) PDT-Vallex

zeptat se, otázat se
- *ptát se dcery na známky;p. se na děti*

ask ACT(sub) **PAT**(to+inf;for[objpp;ving]) **ADDR**(obj1) EngVallex

- *Argentina will ask creditor banks to halve its foreign debt of $64 billion.*
- *The National Institutes of Health asked for an HHS review of its plan to implant fetal tissue into the brain of a patient suffering from Alzheimers.*

Argument mapping for "ptát se" (v-w5371f1) and "ask" (ev-w141f1):
- ACT → ACT
- PAT → PAT
- ADDR → ADDR

Show corpus examples

ask ACT(sub) **PAT**(obj1;about[objpp;ving;whether+vp];whether+vp;if+v) **ADDR**(obj1; of[objpp]) EngVallex

- *The mathematics section of the widely used California Achievement Test asks fifth graders "What is another name for the Roman numeral IX?"*
- **trace* ask him about this law he tried to pass.*
- *John asked a question of his professor.*

Argument mapping for "ptát se" (v-w5371f1) and "ask" (ev-w141f2):
- ACT → ACT
- EFF → PAT
- ADDR → ADDR
- PAT → ---

Show corpus examples

LINDAT CLARIN

Valency in PCEDT: CzEngVallex

http://lindat.mff.cuni.cz/services/CzEngVallex/CzEngVallex.html

ptát se $^{\text{PDT-Vallex}}$: **ask** $^{\text{EngVallex}}$

ptát se ACT(1) **PAT**(na+4;↓zda;↓jestli;↓c;.s) **ADDR**(2) $^{\text{PDT-Vallex}}$

zeptat se, otázat se
- *ptát se dcery na známky;p. se na děti*

ask ACT(sub) **PAT**(to+inf;for[objpp;ving]) **ADDR**(obj1) $^{\text{EngVallex}}$

- *Argentina will ask creditor banks to halve it*
- *The National Institutes of Health asked for implant fetal tissue into the brain of a patie*

Argument mapping for "ptát se" (v-w537
ACT → ACT
PAT → PAT
ADDR → ADDR

pcedt **When I** ACT **asked American Airlines** ADDR **for** PAT **its side** PAT of the story for use in my MBA class , where I teach business ethics , it did not respond .

pcedt **Když jsem se společnosti** ADDR **American Airlines ptal na** PAT její **verzi** PAT příběhu , abych to použil při výuce ve své třídě manažerského studia , kde vyučuji obchodní etiku , neodpověděla .

ask ACT(sub) **PAT**(obj1;about[objpp;ving;whether+vp];whether+vp;if+v) **ADDR**(obj1; of[objpp]) $^{\text{EngVallex}}$

- *The mathematics section of the widely used California Achievement Test asks fifth graders "What is another name for the Roman numeral IX?"*
- **trace* ask him about this law he tried to pass.*
- *John asked a question of his professor.*

Argument mapping for "ptát se" (v-w5371f1)
ACT → ACT
EFF → PAT
ADDR → ADDR
PAT → ---

pcedt The discrepancy may be because **asking people** ADDR **about** PAT their fitness **regime** PAT is a bit like inquiring about their love life .

pcedt Rozpor může být způsoben tím , že **ptát se lidí** ADDR **na** PAT cvičební **režim** PAT je trochu jako vyzvídat podrobnosti milostného života .

Valency in PDT/PCEDT: Actants (Verbs)

- Actor (ACT) …functor for the first syntactic position
- Patient (PAT) … functor for the second syntactic position
- Effect (EFF) … the third syntactic position (semantically indistinct)
- Addressee (ADDR)
- Origin (ORIG)

Valency in PDT/PCEDT: Actants (Verbs)

- Actor (ACT) …functor for the first syntactic position

human and non-human agent

Její manžel tam pracuje dál.	*Her husband still works there.*
Ten román mě oslovil.	*The novel appealed to me.*
Byl zabit bleskem	*He was killed by lightning.*
zločiny mafie na Sicílii	*the Mafia's crimes on Sicily*

bearor of an event / of a quality or property

Sklo zůstává nalepené na fólii	*The glass stays stuck to the foil.*
Matka leží.	*Our mother is in bed.*
Karoserie je z plechu.	*The car body is made of plate.*
radost obyvatel z nezávislosti	*the joy of the citizens of an independence*

experiencer

Českým skokanům se dařilo dobře.	*The Czech jumpers were doing well.*
Je mi smutno.	*I am sad*
Líbí se mi to.	*I like it.*

possesor

Přítel má nové auto.	*A friend of mine has a new car.*
Přítel prodal chalupu.	*A friend of mine sold his cottage.*

PDT: t-layer – valency as a keystone

Valency in PDT/PCEDT: Actants (Verbs)

- Actor (ACT)

- Patient (PAT) … functor for the second syntactic position

  object affected by an event (created / being destroyed / changing its property …)

Postavili stany.	*They pitched the tents.*
Uspal dcerku.	*He put his daughter to sleep.*
Prodal dům.	*He sold the house.*
Házel kamenem	*He was throwing a stone.*

  object specifying an event or its goal

Rád hraje kopanou / na klavír	*He likes playing football / the piano*

  possessor

Kniha patří Janovi	*The book belongs to Jan.*
Matce nezbyly žádné peníze.	*No money remains to my mother.*

  stimulus

Jareček se bojí psů.	*Jareček is afraid of dogs.*

  recipient

Ozval se mu.	*He let him know.*

  theme/topic of a book, story, painting (esp. verbs of communication)

Vyprávěl nám o svých cestách.	*He was talking on his travels.*

PDT: t-layer – valency as a keystone

Valency in PDT/PCEDT: Actants (Verbs)

- Actor (ACT)
- Patient (PAT)
- Effect (EFF) … the third syntactic position (semantically indistinct)

quality/property or state the Patient has in the course of the event

Považoval Pavla za odborníka.   *He considered Pavel a professional.*

Zachovali památku neporušenou.   *They kept the memory intact.*

final state

Zvýšili počet voličů z 50% na 75%.   *They increased the number of the voters from 50% to 75%.*

so called slavonic accusative (esp. verbs of perception)

Slyšet hodiny tikat.   lit: *He heard the clock ticking.*

dictum = what was said (esp. verbs of communication)

Petr vyprávěl o dovolené zábavné historky.

        Petr told us amusing stories about his holiday.

direct or indirect speech

Řekli mu: "Nechoď tam!"   *They told him: "Do not go there!"*

Oznámil, že nepřijde.   *He announced that he would not come.*

Valency in PDT/PCEDT: Actants (Verbs)

- Actor (ACT)
- Patient (PAT)
- Effect (EFF)
- Addressee (ADDR)

recipient with verbs of giving

Dal <u>dítěti</u> hračku.   *He gave <u>the child</u> a toy.*

Učí <u>děti</u> angličtinu.   *He gives <u>children</u> English lessons.*

original possessor

Vzal <u>dítěti</u> hračku.   *He took the toy <u>from the child</u>.*

Ukradl <u>cizinci</u> peněženku.   *He stole a wallet <u>from a foreigner</u>.*

benefactor/recipient the event is directed at

Obrátil se <u>na soud</u> s problémem.   *He turned <u>to the court</u> with a problem.*

partner of the event

Svou nejtěžší bitvu vybojoval <u>s přáteli/nad přáteli</u>.

He won his heaviest battle <u>with</u> his <u>friends</u>.

Valency in PDT/PCEDT: Actants (Verbs)

- Actor (ACT)
- Patient (PAT)
- Effect (EFF)
- Addressee (ADDR)
- Origin (ORIG)

material something is made from

   Vyráběli nábytek ze dřeva.   *They made furniture <u>out of wood</u>.*

   nádoba <u>z plechu</u>   *a dish (made) <u>of plate</u>*

circumstances, event or state on the basis of which something comes into existence

   Vybudoval kariéru <u>na</u> cizí <u>práci</u>.   *He built his career <u>on</u> other people's <u>work</u>.*

original owner (usually animate), the source something comes from

   Získal <u>na dětech</u> slib.   *He got a promise <u>from the children</u>.*

   dárek <u>od maminky</u>   *a present <u>from</u> his <u>mom</u>*
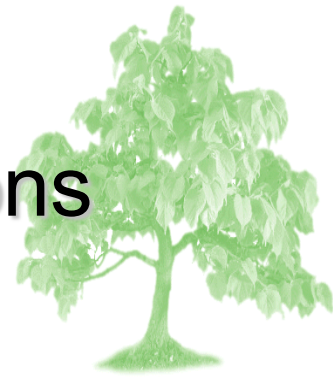
initial state (with verbs of change)

   Předělala loutku <u>z kašpárka</u> na čerta.

                            She remade the puppet <u>from the jester</u> into the devil.
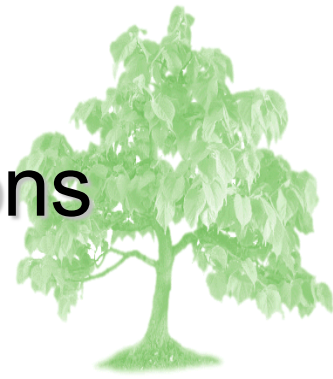
Valency in PDT/PCEDT: Free Modifications

- Local and directional modifications
- Temporal modifications
- Manner
- Causality

- Verbal Complement / secondary predication (cz: doplěk)
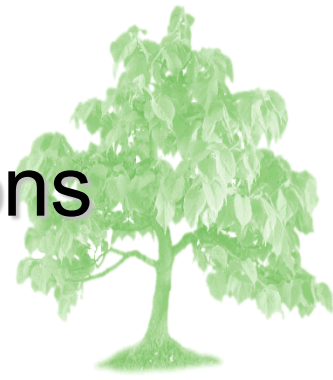
- Additional

Valency in PDT/PCEDT: Free Modifications

- Local and directional modifications
  - DIR1   *Přijeli z Plzně.*   *They came from Plzeň.*
                 Ustoupil od stěny.   *He stepped back from the wall.*
                 jeden z chlapců   *one of the boys*
  - DIR2   *Šli podél lesa.*   *They walked along the forest*

                 Přes louku vede cesta.   *There is a path across the meadow.*
  - DIR3   *Odešel do města.*   *He left for a city.*
                 Schoval se pod deštník. *He hid himself under an umbrella.*
                 Položil to blízko vázy.   *He put it near the vase.*
  - LOC   *Obchod stojí naproti nádraží.*   *The shop is located opposite the station.*
                 Nebezpečí může být všude kolem nás.   *Danger can be all around us.*
                 Kde na mě počkáte?   *Where will you wait for me?*

Valency in PDT/PCEDT: Free Modifications
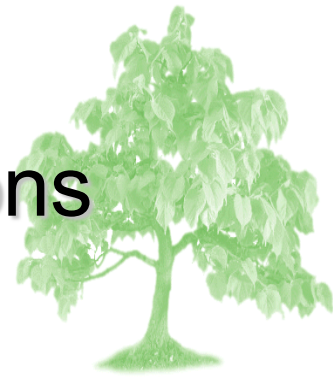
- Local and directional modifications
  - DIR1   *Přijeli z Plzně.*   *They came from Plzeň.*
                 Ustoupil od stěny.   *He stepped back from the wall.*
                 jeden z chlapců   *one of the boys*
  - DIR2   *Šli podél lesa.*   *They walked along the forest.*
                 Přes louku vede cesta. *There is a path across the meadow.*
  - DIR3   *Odešel do města.*   *He left for a city.*
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  - LOC   *Obchod stojí naproti nádraží.*   *The shop is located opposite the station.*
                 Nebezpečí může být všude kolem nás. *Danger can be all around us.*
                 Kde na mě počkáte?   *Where will you wait for me?*

+ *subfunctors* for more specific classification

    e.g.: DIR2 … basic (adverb, noun$_{Instr}$), across, along, around, betw, near, nr

Valency in PDT/PCEDT: Free Modifications

- Local and directional modifications
- Temporal modifications
  - **TWHEN**   _Zítra má být už hezky._   _Tomorrow weather should be nice._
    + subfunctors: basic, after, approx, before, begin, betw, end, flow, mid, nr
  - TFHL   _Používá se jen dočasně._   _It is used only temporarily._
  - TFRWH   _Přeložil výuku z pátku na vhodnější dobu._
                        He postponed the lesson from Friday to more convenient time.
  - THL   _Spor se táhne donekonečna._   lit: _The dispute lasts forever._
  - THO   _Běžně chodil k svému lékaři._   _Commonly he visited his physician._
  - TOWH   _Přeložil výuku na pátek._   _He postponed the lesson to Friday._
  - TPAR   _Hraje a přitom zpívá._   _He is playing and at the same time singing._
  - TSIN   _Znají se od školy._   _They know each other since their school years._
  - TTILL   _Dodnes nevím, kde je._   _Till today I do not know where he is._

PDT: t-layer – valency as a keystone

Valency in PDT/PCEDT: Free Modifications
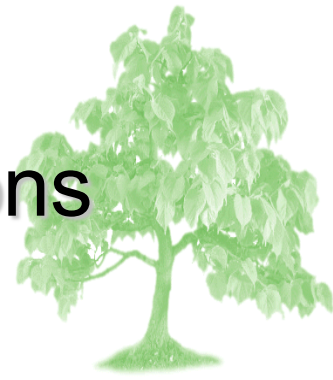
- Local and directional modifications
- Temporal modifications
- Manner   (ACMP, CPR and EXT with subfunctors)
  - **MANN**   *Pracuje pomalu.*   *He is working <u>slowly</u>.*
  - ACMP   *Tatínek <u>s maminkou</u> šli do divadla.   Father <u>with mother</u> went to the theater.*
             válečná plavidla <u>včetně</u> bojových <u>letadel a vrtulníků</u> warships <u>including air force</u>
  - CPR   *<u>Naproti tomu</u> Jirka přišel včas.   <u>On the contrary</u>, Jirka was on time*
             Na Afriku zbývají jen asi 3 miliardy dolarů ročně, což je méně, <u>nežli obdržela</u> loni
             Malajsie.   …, which is less <u>than</u> Malaysia <u>got</u> last year.
  - CRIT   *<u>Podle regulí</u> GATT lze toto opatření přijmout maximálně na dobu šesti měsíců.*
                         <u>According to</u> the GATT <u>rules</u>, it is possible to take the measure
  - DIFF   *Pavel je <u>o 2 cm</u> větší než já.   Pavel is taller than me <u>by 2 cm</u>.*
  - EXT   *Utkání se <u>příliš</u> nevyvedlo.   The match wasn't <u>very</u> good.*
  - MEANS *Napsal to <u>na počítači</u>.   He wrote it <u>on the computer</u>.*
  - REG   *Sbor je <u>(co) do počtu</u> slabý.   The choir is weak, <u>as to the number</u> of people.*
  - RESL   *Marie <u>úspěšně</u> prošla zkouškami. Marie passed the exams <u>successfully</u>.*
  - RESTR   *<u>Kromě Pavla</u> nepřišel ještě Mirek. <u>Apart from Pavel</u>, also Mirek didn't come.*

PDT: t-layer – valency as a keystone

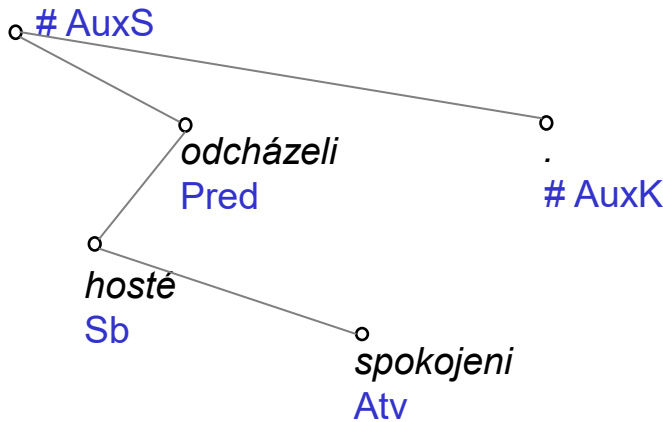# Valency in PDT/PCEDT: Free Modifications
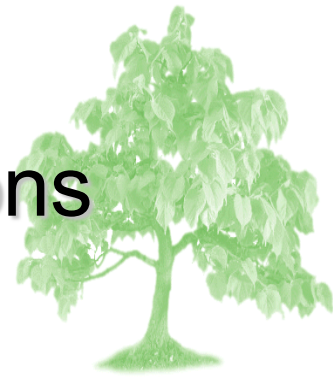
- Local and directional modifications
- Temporal modifications
- Manner
- Causality

  - AIM   *Jsem tu pro to, abych vám pomohl.*   lit: *I am here in order to help you.*

  - **CAUS**   *Nepovím vám to, protože byste mi stejně nevěřili.*
    I will not tell you because you would not believe me anyway.
    Kvůli tobě mám teď po dobré náladě.   Because of you my good humor is gone.

  - CNCS   *Ač zemřeli, ještě mluví.   Although they are dead, they still speak.*

    Při vší opatrnosti stejně několik hrnců rozbila.
    Despite all her carefulness she has still broken several pots.

  - COND   *Jestliže nepůjde dobrovolně, použijeme násilí.*
    lit: *If he does not go willingly we shall use a force.*

  - INTT   *Šel nakoupit, aby doplnil zásoby.   He went shopping to replenish the stock.*
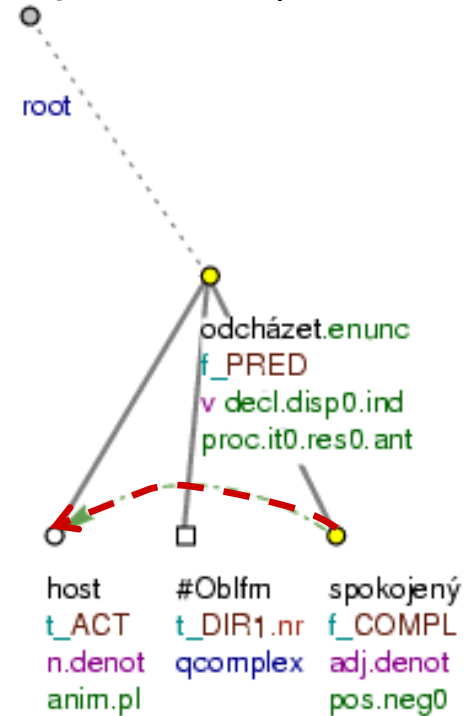
Valency in PDT/PCEDT: Secondary Predication

- functor COMPL … verbal complement / secondary predication

    (cz: doplněk)

- two syntactic dependencies
    - verbal governing node … parent in a dependency tree
    - nominal governing node … coreference arrow (compl.rf, later)

root

AuxS

odcházeli
Pred

.
AuxK

hosté
Sb

spokojeni
Atv

odcházet.enunc
f_PRED
v decl.disp0.ind
proc.it0.res0.ant

host
t_ACT
n.denot
anim.pl

#Oblfm
t_DIR1.nr
qcomplex

spokojený
f_COMPL
adj.denot
pos.neg0

Hosté odcházeli spokojeni.
lit. *Guests were leaving satisfied*

Valency in PDT/PCEDT: New Types (Verbs)
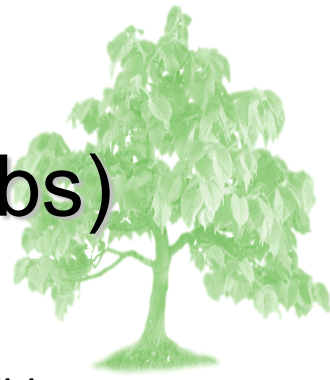
- BEN

  Kreslil <u>pro děti</u> nádherné obrázky.   *He painted beautiful paintings <u>for the children</u>.*

  Padá <u>mu</u> hlava na prsa.   *His head is falling on his breast.*

  Ten pán <u>vám</u> měl ale fousy!   *The beard the man had!*

- CONTRD

  <u>*Zatímco loni v premiéře proti Samprasovi hrál chaoticky*</u>, *nyní už měl plán.*

  <u>*While he played chaotically last year in his premiere against Sampras*</u>, *now he had a plan.*

- HER

  Zůstal zde majetek <u>po</u> třech a půl <u>miliónu</u> Němců.

              The property <u>after</u> 3,5 <u>millon</u> of Germans was left here.

  Jméno dostala holčička <u>po kmotře</u>.   *The girl has got the name <u>after the godmother</u>.*

  BUT: *Jméno dostala holčička <u>od kmotry</u>.*ORIG   *The girl has got the name <u>from the godmother</u>.*

- SUBS

  Do učeben zasednou otcové <u>místo</u> svých <u>synů</u>.

              The fathers will sit in the classrooms <u>instead of</u> their <u>sons</u>.

  Mám-li ovšem mluvit <u>za sebe</u>, trochu maluji a píšu.

              But should I speak <u>for myself</u>, I paint and write a little.

Valency in PDT/PCEDT: Nouns

nominal dependents (Piťha, 1981)

- Partitive (MAT) (also Material) … actant
- Appurtenance (APP)   (cz přináležitost)
- Identity (ID)
- Author (AUTH)
- Descriptive attribute (DESCR)
- (Restrictive) attribute (RSTR)

more-or-less used for all non-valency nominal attributes

Valency in PDT/PCEDT: Nouns

nominal dependents (Piťha, 1981)

- Partitive (MAT) (also Material) … actant

    governing node … container; quantification

    sklenice <u>piva</u>, košík <u>hub</u>   *a glass <u>of bier</u>, a basket <u>of mushrooms</u>*
    skupina <u>studentů</u>, sada <u>nožů</u>   *a group of students, a set <u>of knives</u>*
    miliony <u>lidí</u>; čtvrt <u>milionu</u>   *millions <u>of people</u>; a quarter <u>(of) million</u>*

Valency in PDT/PCEDT: Nouns

nominal dependents (Piťha, 1981)

• Partitive (MAT) (also Material) … actant

• Appurtenance (APP) (cz přináležitost)

~ something belongs to something

family relations: *otec dítěte, můj bratr*	*the father of the child, my brother*
part-whole rel.: *střecha domu*	*a roof of a house*
set-member rel.: *člen týmu, tým brankářů*	*a member of the team , a team of goal-keepers*
organizace neslyšících	*an organization of the hearing-impaired*
possession: *naše kapela, její seznam*	*our band, her list*

Valency in PDT/PCEDT: Nouns

nominal dependents (Piťha, 1981)

• Partitive (MAT) (also Material) … actant

• Appurtenance (APP) (cz přináležitost)

• Identity (ID)

> form … nominative of identity (cz nominativ jmenovací) / genitive
> meta-language expressions
>> *slovo stát*   *the word to stand*
>
> proper nouns and names of animals, objects and events
>> *nápis Obětem války*   *the sign "To the victims of war"*
>>
>> *skladba Svatý Václave*   *the piece Saint Wenceslas!*
>>
>> *povídka Opatrně*   *the short story Carefully*
>>
>> *pražská Galerie U Řečických*   *the Prague gallery U Řečických*
>>
>> *starobylé písně ze Sušilovy sbírky Vandrovali hudci*
>>
>>   *old songs from Sušil's collection Vandrovali hudci*
>>
>> *publikace Začínáme podnikat*   *the publication Introduction to business*

Valency in PDT/PCEDT: Nouns

nominal dependents (Piťha, 1981)

- Partitive (MAT) (also Material) … actant
- Appurtenance (APP) (cz přináležitost)
- Identity (ID)
- Author (AUTH) … free modification

> the author of an artefact
>
> form … a noun expr. by genitive or by a possessive adjective
>
> *básně Vítězslava <u>Nezvala</u>*   *poems by Vítězslav <u>Nezval</u>*
>
> *dekret nového prezidenta Leonida <u>Kučmy</u>*
>
> *the order of the new president Leonid <u>Kutchma</u>*
>
> *román Oty <u>Filipa</u>*   *a novel by Ota <u>Filip</u>*
>
> *<u>autorova</u> současná tvorba*   *<u>author's</u> present work*
>
> *<u>jeho</u> texty*   *<u>his</u> texts*
>
> *<u>skladatelovo</u> nejúspěšnější hudebně-dramatické dílo*
>
> *the <u>composer's</u> most famous musically-dramatic piece)*
>
> *podobizna Matěje Kopeckého od M. <u>Alše</u>*   *the portrait of Matěj Kopecký by M. <u>Aleš</u>*


```
báseň.enunc
f_DENOM
n.denot
fem.pl

Nezval
f_AUTH
n.denot
anim.sg
person_name

Vítězslav
f_RSTR
n.denot
anim.sg
person_name
```

PDT: t-layer – valency as a keystone

Valency in PDT/PCEDT: Nouns

nominal dependents (Piťha, 1981)

- Partitive (MAT) (also Material) … actant

- Appurtenance (APP) (cz přináležitost)

- Identity (ID)

- Author (AUTH)

- Restrictive attribute (RSTR)

drsné počasí	*rough weather*
sedící žena	*a sitting woman*
několik měsíců	*a few months*
pět dětí	*five children*
Karlova univerzita	*Charles University*
Karel Novák	*Karel Novák*
rozhodčí Severýn	*the referee Severyn*
v Praze - Dejvicích	*in Prague - Dejvice*

- Descriptive attribute (DSTR)

Valency in PDT/PCEDT: Adjectives

- the same repertoire of dependents as for verbs
- plus functors for comparative and superlative
- (Piťha,1982), (Panevová,1998)
    - PAT: *plný čeho [full of st], schopný čeho [capable of st],*
      lačný čeho [athirst to st], podobný čemu [similar to st], příbuzný čemu [related to st]
    - ADDR: *nepříjemný komu [unpleasant to sb], přístupný komu [accesible to sb]*
      povědomý komu [familiar to sb]
    - PAT ADDR: *odpovědný komu za co [responsible for st to sb], vděčný komu za co*
      [grateful to sb for st]

Functors for Non-Valency Relations

• effective root of an independent clause
• coordination, apposition
• complex predicates, multiword expressions, phrasemes
• rhematizers

Functors for Non-Valency Relations

- effective root of an independent clause

PRED   *Pavel <u>dal</u> kytku Marii.*   *Paul <u>gave</u> a flower to Mary.*

DENOM   restriction to nouns in nominative

              <u>Názory</u> čtenářů.   *Readers' opinions.*

VOCAT   *Milá <u>Jano</u>!*   *Dear Jane!*

              Pane <u>majore</u>, hodlám zavést nové prvky.

                            <u>Sir</u>, I intend to introduce new elements.

PARTL   *<u>Pozor</u>!*   *<u>Attention</u>!*

              <u>Ano</u>, to je pravda.   *<u>Yes</u>, that is true.*

PAR   *Přijedu 13. prosince (<u>pátek</u>).*   *I will arrive on December 13 (<u>Friday</u>).*

Functors for Non-Valency Relations

- effective root of an independent clause
- coordination, apposition

CONJ *Mezi smysly patří zrak <u>a</u> sluch.*   *Eyesight <u>and</u> hearing belong to the senses.*

Vyniká <u>jak</u> svědomitostí, <u>tak</u> houževnatostí.

She stands out due to her thoroughness, <u>as well as</u> her stringiness.

Šel, <u>aniž</u> by to viděl. {#Neg.CM}   lit. *He was walking without seeing it.*

DISJ   *ať vítaný, <u>či</u> nevítaný*   *welcome <u>or</u> not*   (only one of them is true)

Vysloví se <u>buď</u> pro, <u>nebo</u> proti návrhu.

They will be <u>either</u> for <u>or</u> against the proposal.

ADVS   *Vypadalo to, že bude hezky, <u>ale</u> začalo pršet.*

The weather looked nice <u>but</u> then it started raining.

CONFR   *Bristol je v Anglii, <u>kdežto</u> Glasgow je ve Skotsku.*

Bristol is in England, whereas Glasgow is in Scotland.

CONTRA *spor Klaus <u>versus</u> Zieleniec.*   *a variance Klaus <u>vs</u>. Zieleniec*

CSQ   *Byl nemocný, proto nepřišel.*   *He was sick so that's why he didn't come.*

GRAD   *Nemůže se pohnout, <u>natož</u> vstát.*   *He can't move, <u>let alone</u> get up.*

REAS   *Úkol splníme, <u>vždyť</u> není obtížný.*   *We'll fulfill the task, <u>for</u> it is not difficult.*

Functors for Non-Valency Relations

- effective root of an independent clause
- coordination, apposition

APPS

Božena Němcová , autorka Babičky

Božena Němcová , the author of Babička

Morová rána : Skuhravý zraněn.

Catastrophe : Skuhravý injured
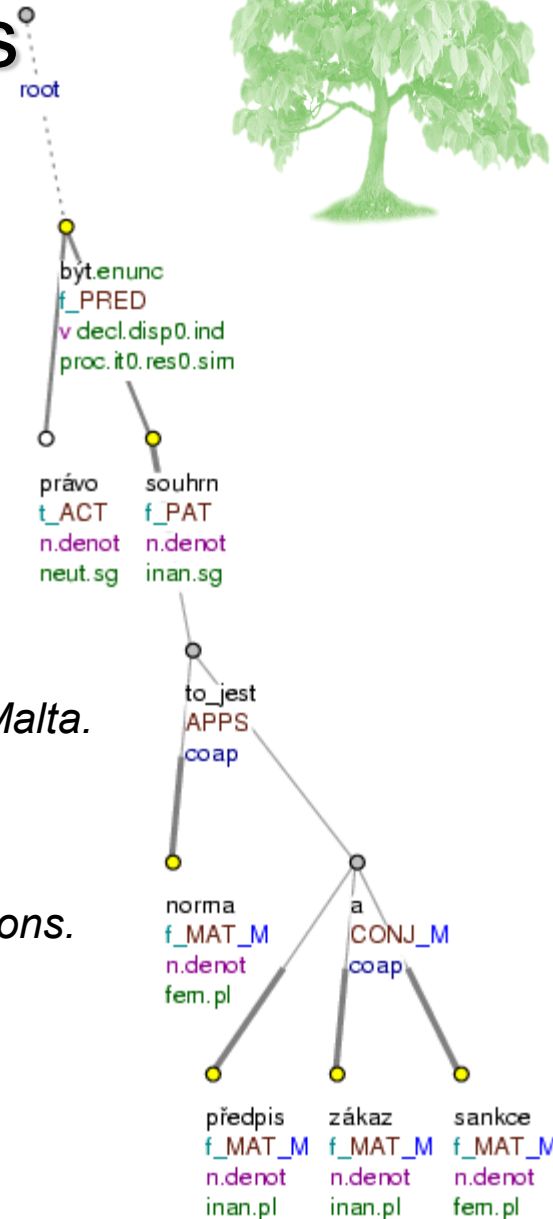
Labe/Elbe.

Tomu odpovídala cílová místa - Kypr, Kréta, Malta.

This was reflected by the destinations - Cyprus, Crete, Malta.

ODS (Občanská demokratická strana)

Právo je souhrnem norem, to jest předpisů, zákazů a sankcí.

Law is a collection of norms, i.e. regulations,

prohibitions and sanctions.

Functors for Non-Valency Relations

- effective root of an independent clause
- coordination, apposition
- complex predicates, multiword expressions, phrasemes

CPHR … a part of compound predicate … 'light verb' + noun

Dostali <u>rozkaz</u> nevycházet ze stanů.   *They received <u>a command</u> not to leave their tents.*
Učinil <u>rozhodnutí</u>.   *He made <u>a decision</u>.*
Je <u>třeba</u> odejít.   *It <u>is necessary</u> to leave.*
BUT: verbonominal predicate with copula *být*
Kočka je <u>savec</u>.PAT   *The cat is a mammal.PAT*

DPHR … (a dependent part of) a phraseme

Jde mi <u>na nervy</u>.   *He gets on my nerves.*
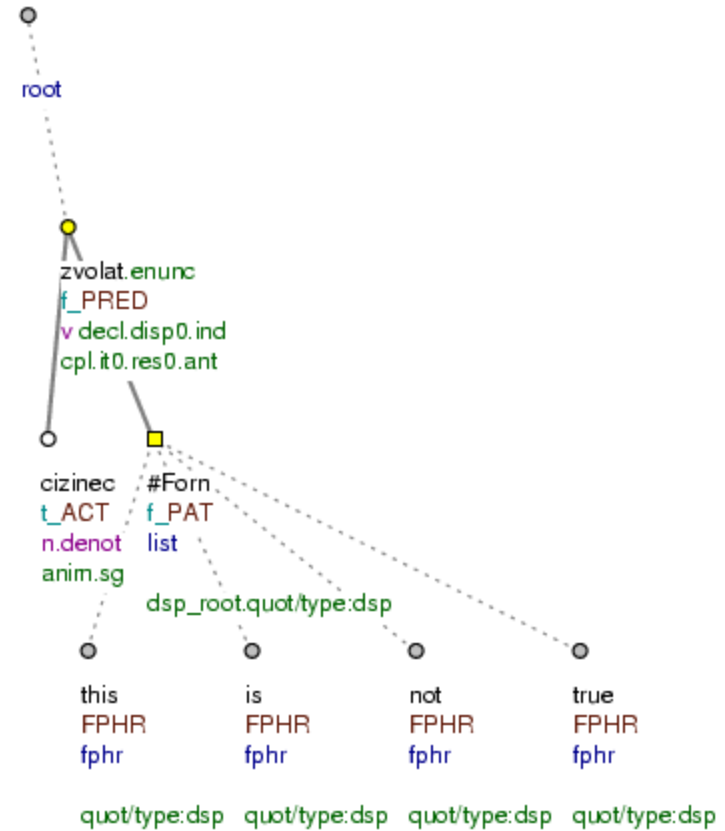*Chodil křížem.DIR2 <u>krážem</u>.*   *lit: He was walking criss <u>cross</u>.*

Functors for Non-Valency Relations

- effective root of an independent clause
- coordination, apposition
- complex predicates, multiword expressions, phrasemes

FPHR   *Cizinec zvolal: "This is not true."*   *The foreigner shouted: "This is not true".*

Functors for Non-Valency Relations

- effective root of an independent clause
- coordination
- complex predicates, multiword expressions, phrasemes
- rhematizers; conjunction modifiers   (see TFA later)

ATT   *Je to bohudíky za námi!*   *Is it thank God over!*
       Vypovědět ji prostě nelze.   *It is simply impossible to expel it.*
       To je fakticky zlé.   *That is really bad.*

INTF   *To on Jirka ještě spí.*   *lit: Well, Jirka still is still sleeping.*

MOD   *Pravděpodobně přijdeme.*   *We will probably come.*
       Vím jistě, že Praha mě poznamená. *I know for sure that Prague will affect me.*

PREC   *Jsem tedy šťasten.*   *I am therefore happy.*
       Ale to zatím není náš případ. *But that is not our case so far.*

RHEM adverbial and particle expressions
       On o tom jen nevěděl nic.   *He only did not know anything about it.*
       negative/affirmative expressions
       Kdyby {#EmpVerb.COND} ano, pak by asi skončil ve vězení
                                       If so then he would probably end up in prison.

PDT: t-layer – valency as a keystone

Functors for Non-Valency Relations

- effective root of an independent clause
- coordination
- complex predicates, multiword expressions, phrasemes
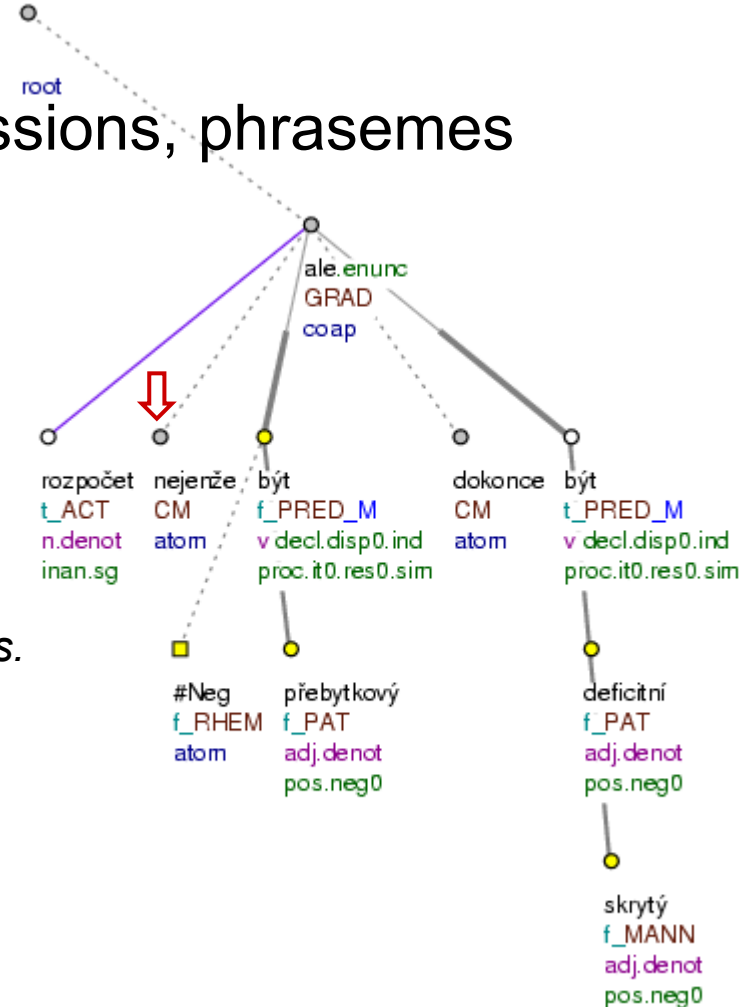- rhematizers; conjunction modifiers
  CM

  Rozpočet nejenže.CM není přebytkový,
  ale.GRAD dokonce.CM je skrytě deficitní.
  The budget not only isn't surplus,
  it is even covertly deficit.
  Kreslíme tužkou a.CONJ k tomu.CM ještě.CM
  malujeme pastelkami.
  We draw with a pencil and moreover with colored pencils.

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