

DM meets DRT. Syntax and Semantics of German *ung*-nominalisation

WORKSHOP ON THEORETICAL MORPHOLOGY 4
Antje Roßdeutscher

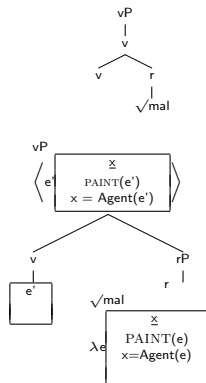
Universität Stuttgart
Institut für maschinelle Sprachverarbeitung
– Logik und Sprachphilosophie –
Azenbergstr. 12
D 70174 Stuttgart
antje@ims.uni-stuttgart.de

June 20th, 2007

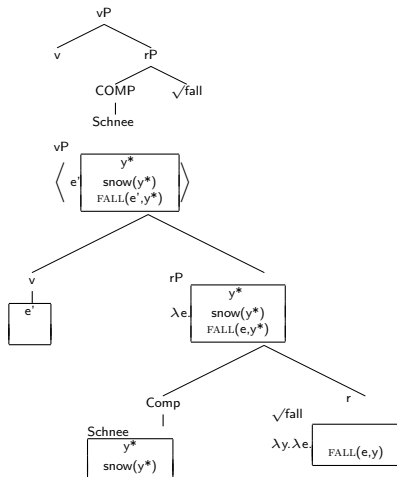
- ▶ A theory of word-formation and interpretation in context
 - ▶ word formation is inspired by principles of the research program 'Distributed Morphology'(DM). Verbs and derived nominals are constructed from 'roots'
 - ▶ we assign a semantics to the roots
 - ▶ constructions are assigned a compositional semantics, determined by their syntactic trees.
- ▶ (i) When is *ung*-nominalisation possible?
- ▶ (ii) What are the possible meanings of *-ung*-nouns?

negative core example: roots denoting event types

er malte (und malte) (*Malung)
 he painted (and painted)



Schnee fiel (*Fallung)
 snow fell



syntactic constraints on the formation of *ung*-nouns

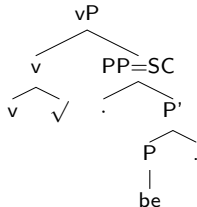
Core-transitive verbs [Levin:1999], [Kratzer:2005]
-*ung*-noun

den Tisch säubern , reinigen
the table clean

* den Tisch sauber reinigen

eine Tür mit Blumen bemalen
a door with flowers PREF-paint

[Marantz:2005] bi-eventive syntactic structure

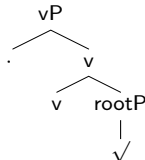


no -*ung*-noun

den Tisch putzen, wischen
the table wipe

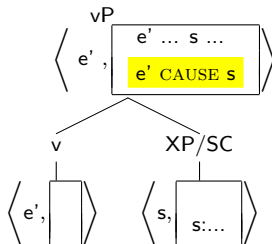
den Tisch sauber wischen

Blumen (auf eine Tür) malen
number (onto a door) paint



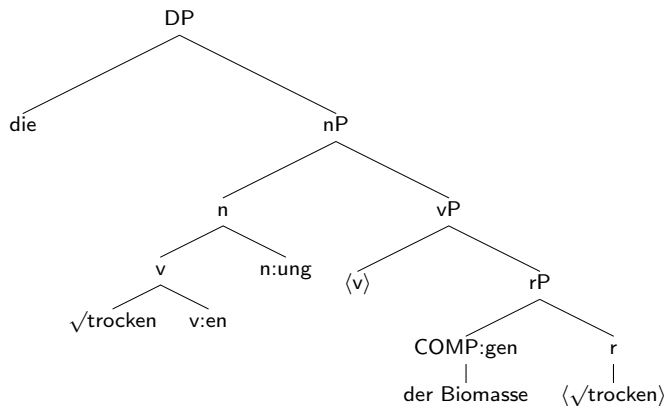
syntactic constraints on the formation of *ung*-nouns

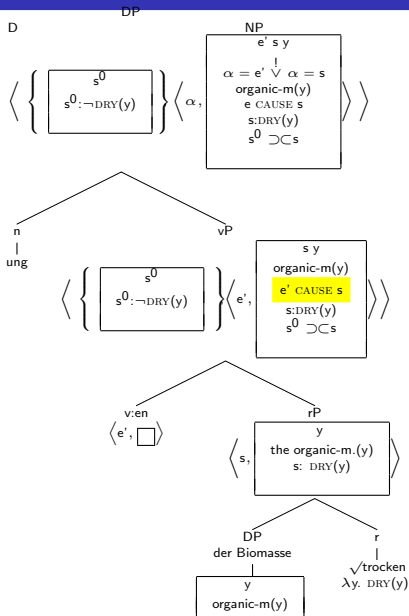
- ▶ *ung* is a 'deverbal' nominalisation operator, in the following sense:
 - ▶ *-ung* operates above vP and below voiceP
 - ▶ *-ung* requires as input a 'syntactically transparent' cause-result structure where the semantic representation of vP contains a condition of the form 'e' CAUSE s' and where this condition results from the combination of one daughter contributing e' and the other daughter contributing s.



positive core examples: verbs from property roots

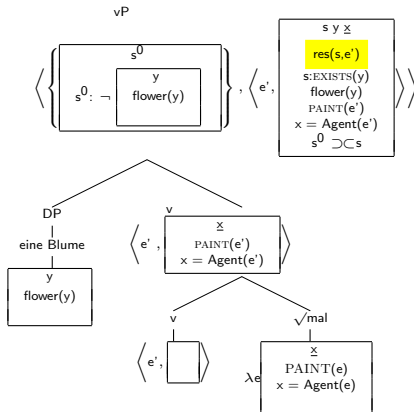
die Trocknung der Biomasse
the drying of the organic-material





non-core transitive verbs have no *ung*-nominal

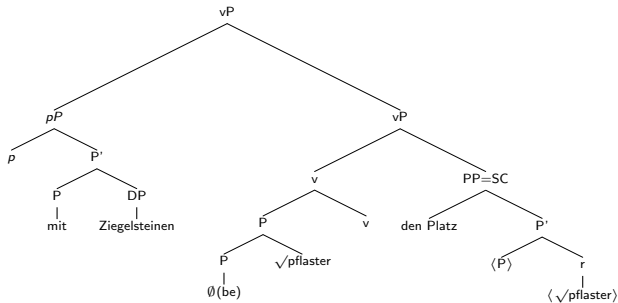
- (2) eine Blume malen
a flower paint



$\text{res}(s,e')$ — e' CAUSE s : the semantics of the vP does not suffice that an *ung*-nominalisation **die Malung einer Blume* is not possible. But the verbal constructions are different in syntactic respects.

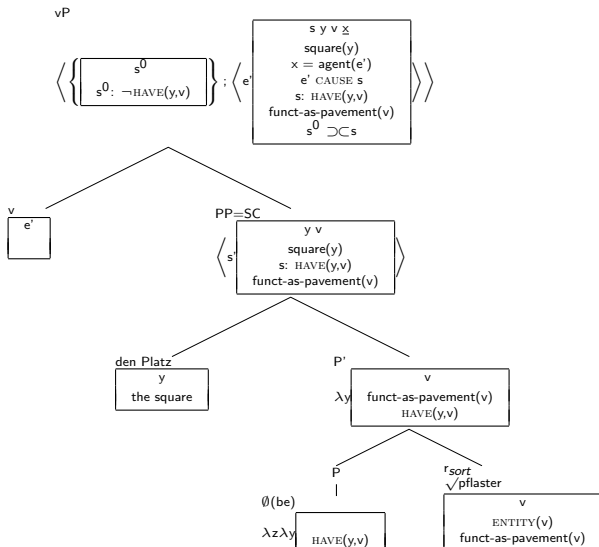
einen Platz (mit Ziegelst.)
 a square (with tiles)
 (be)pflastern
 pave

die (Be)pflasterung des Platzes (mit
 the pavement of the square (with
 Ziegelst.)
 tiles)

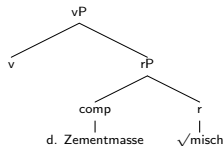


einen Platz (be)pflastern
 a square pave

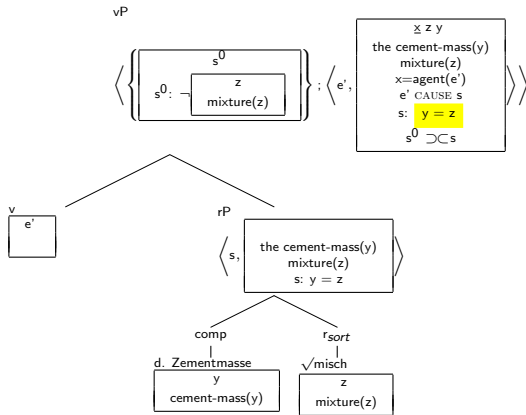
die (Be)Pflasterung des Platzes
 the pavement of the square



die Zementmasse mischen
 the cement-mass mix



die Mischung der Zementmasse
 the mix-ung of the cement-mass



- ▶ the range of possible readings of *ung*-nouns and past participles are two sides of the same coin.

1

die Biomasse war getrocknet
the organic-m. be:aux:pst dried

die Trocknung der Biomasse
the drying of the organic m.

2

die Zementmasse war gemischt
the cement-mass be:aux:pst mixed

die Mischung der Zementmasse
the mixing of the cement-mass

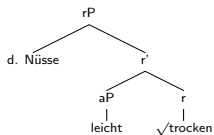
3

der Platz war gepflastert
the square be:aux:pst paved

die Pflasterung des Platzes
the pavement of the square

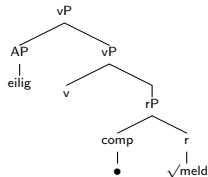
- ▶ An *ung*-noun has a target state reading if and only if the past participle of the corresponding verb has one.
- ▶ an *ung*-noun has an entity-reading if the corresponding verb is built from a sortal root

1 nach einer leichten Trocknung der
 after a slight dry-ung of the nuts
 Nüsse



→ the nuts are slightly dry

2 uns erreichte eine eilige Meldung
 reached us a hurry-ADJ report



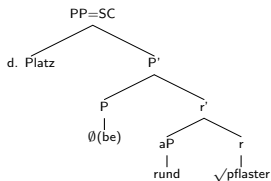
→ the reporting action was performed in a hurry

3 eine runde Pflasterung des Platzes
 a round pavement of the square

3 der (mit Ziegelsteinen) rund gepflasterte
 the (with tiles) round pave-past-perf

Platz
 square

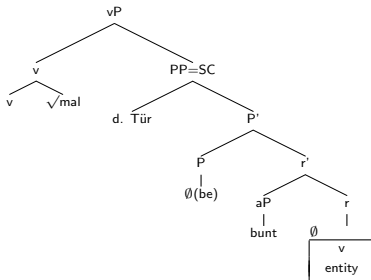
→ the pavement is round, neither square nor tiles are



3 die (mit Blumen) bunt
 the (with flowers) colorful

bemalte Tür
 RREF-paint-PERF door

→ the decoration is colorful, not the flowers;



Is the root class decisive?

√trocken(dry), √weit(wide)	√sauber(clean),	→	property of individuals	1 ev, ts
√land(land); √schulter(shoulder)	√strand(strand);	→	location where the internal arguments is	4 ev, ts
√bild _{sort} (build), √samm _{sort} (collect)	√misch _{sort} (mix), √meld _{sort} (report)	→	entity which is brought about by the event	2 ev, ent,
√pflaster _{sort} (pavement), (spice), √muster _{sort} (pattern)	√würze _{sort}	→	entity which the internal argument is made to have	3 ev,ts,ent

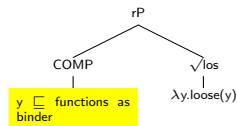
Expectation: the range of readings of *ung*-nouns and past participle depends on the class of the roots

Hypothesis:

Some roots can belong to more than one class at once; they adjust semantics accordingly.

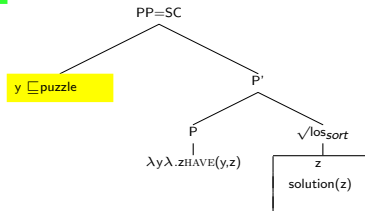
Roots switch semantics wrt. sortal restrictions

1



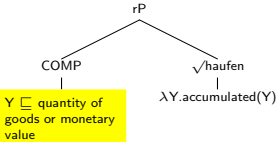
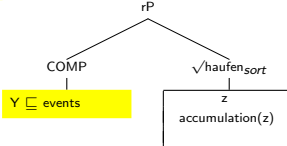
die Lösung der
the undoing of the
Schraube
screw

3



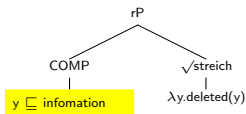
die Lösung des Rätsels
the solution of the puzzle

Roots switch semantics wrt. sortal restrictions

1	2	3
 <p>die Häufung der Vorräte the accumulation of stocks</p>	 <p>die Häufung der Unfälle the accumulation of the accidents</p>	
die wieder gehäuften Vorräte (restit.)	die Unfälle häufen sich wieder (repet.)	

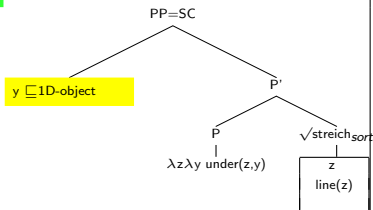
Roots switch semantics wrt. sortal restrictions

1



die Streichung des
the deletion of the
Absatzes
paragraph

3

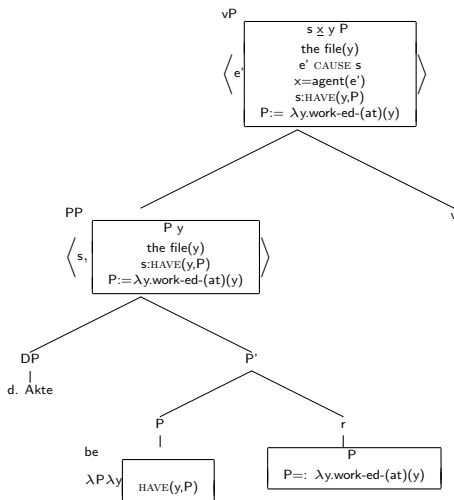
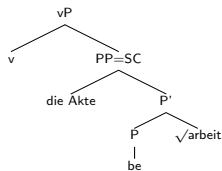


die Unterstreichung der Zeile
the underlining of the line

die Wand streichen , durch die Gegend streichen
the wall paint , through the area wander

5 die Akte war bearbeitet
 the file be:aux:pst PREF-work-PERF

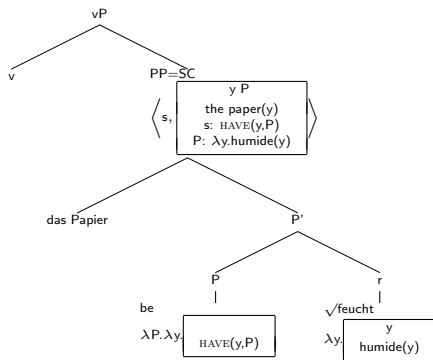
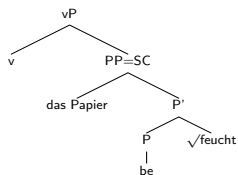
Be-arbeitung-ung der Akte
 PREF-work-ung of the file



die Akte in drei Tagen bearbeiten
 the file in three days PREF-work

Interlude: *be*-select properties 1 ev,ts

1 das Papier war befeuchtet Befeuchtung des Papiers
 the paper be:aux:pst PRE-humide-PERF PREF-humide-ung of the paper



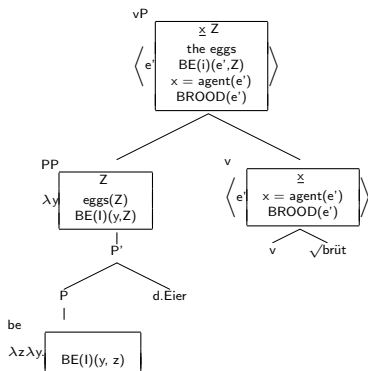
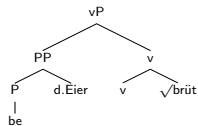
where event roots don't switch to formal result-properties

die bebrüteten Eier
 the PRED-brood-PERF eggs

* die Bebrüt-ung der Eier
 the PREF-brood-ung of the eggs

von Bienen beflogene Pflanzen
 by bees PREF-flieg-PERF plants

* die Befliegung der Pflanzen
 the PREF-fly-ung of the plants



die Eier drei Tage lang bebrüten
 the eggs for three days PREF-brood
 die Pflanzen drei Tage lang befliegen

#die Eier in drei Tagen bebrüten
 the eggs in three days PREF-brood
 # die Pflanzen in drei Tagen befliegen

Conclusion

- ▶ syntactico-semantic constraints on the formation of *-ung*-nominals
- ▶ compositional semantics for verbs and *ung*-nouns determined by their roots and structures
- ▶ structural ambiguity of verbs and *ung*-nouns as determined by different types of roots
- ▶ predictions of the meaning ranges of *ung*-nouns from their root based structure

Questions on the agenda:

- ▶ constraints on class switching of the roots
- ▶ the role of prefixes and particles in complex constructions
- ▶ the role of ontological classes of entity introducing roots

References

(Baker:1988) Mark Baker. *Incorporation. A theory of Grammatical function changing*. The University of Chicago Press. 1988.

(Kiparsky:1997) Paul Kiparsky. Remarks on denominal verbs. In Alex Alsina, Joan Bresnan, and Peter Sells, editors, *Complex Predicates*, pages 473–499. CSLI Publications, 1997.

(Kratzer:2005) Angelika Kratzer. Building resultatives. In Claudia Maienborn and Angelika Wölstein-Leisten, editors, *Events in Syntax, Semantics and Discourse*, pages 177–212. Tübingen (Niemeyer), 2005.

(Levin:1999) Beth Levin. Objecthood. An event structure perspective. In *CLS 35*, pages 223–47. Chicago Linguistic Society, 1999.

(Marantz:1997) Alec Marantz. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Penn Working Papers in Linguistics*, volume 42, pages 201–205, 1997.

(Marantz:2005) Alec Marantz. Objects out of the lexicon: Objects as events. Handout. June 11,2005.

(Rossdeutscher:ms) Antje Rossdeutscher. Syntactic and semantic constraints in the formation and interpretation of *-ung*-nominals. Submitted to Artemis Alexiadou and Monika Rathert (eds) *Nominalizations across Languages*.