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

This paper presents a theory of *ung*-nominalisations which (a) provides syntactico-semantic constraints on their generation, following *Distributed Morphology* (s. (Marantz 1997)) (b) predicts the range of their semantic readings by giving a semantic representation of the roots and a compositional semantics for the word-syntactic trees. The morphosyntactic operations are subject to familiar syntactic constraints, including in particular Baker's *Head Movement Constraint* (Baker 1988). The different readings and their constructions are represented in *Underspecified Discourse Representation Theory*(UDRT).

Empirical findings. *ung*-nominalisation, though productive, is restricted to verbal constructions from 'adjectival' roots, which denote individual properties (e.g. *trocken* (dry) or 'nominal' roots, denoting entities (e.g. *Pflaster*) (pavement). *Ung*-nominalisation is not possible for verbs constructed from event denoting roots, unergatives like *husten* (to cough), unaccusatives like *fallen* (to fall) and verbs that enter syntax as intransitives (non-core-transitives in the sense of (Levin 1999)), e.g. *malen* (to paint), — unless prefixed such that the prefix or particle provides a stative second 'wing' in syntax.

Explanation. *ung* is a 'de-verbal' nominalisation operator in the following sense: (i) *-ung* operates above vP and below voiceP; (ii) *-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, v, contributing e' (event) and the other daughter, rP, s (state), (see (1)).

Verbal constructions with non-core internal arguments lack the syntactic condition of bi-eventivity, see (2), (also (Marantz n.d.)). This is no longer true if such verbs are turned into prefix-verbs by adding *be*, as in *be-malen*. *be* provides a small clause with a prepositional head, which is special in selecting a silent 'figure'-argument for its complement. This 'figure'-argument can be realised only in a *mit*-(with) PP. The 'ground'-argument of P (in SpecP) functions as the internal argument of the verbal construction. (See (3))
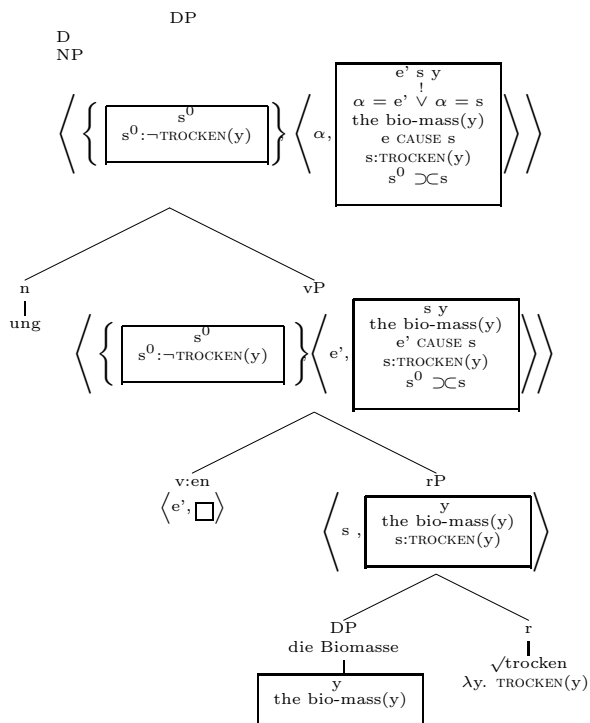
The discourse referent v, which is introduced as the 'figure' argument of P, is semantically specified as 'entity'. It provides the entity reading of the derived noun; e.g. *die Bemalung der Tür mit Blumen* has a reading on which it denotes a decoration which consists of (pictures) of flowers.

(3) is an instance of what we call type3-construction of verbs — one of three construction types all of which admit *ung*-nominalisation.
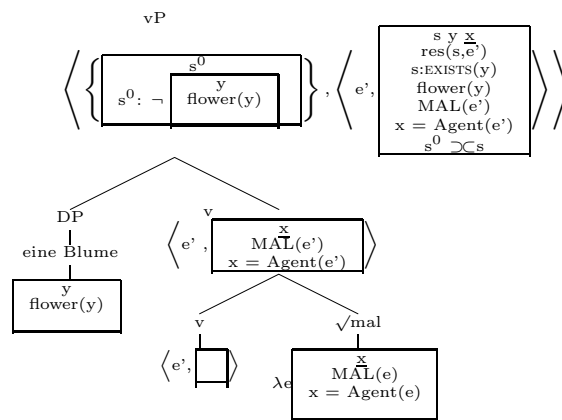
Three Types of verbs and their *ung*-nominals Type3-nominals are based on verbal constructions that are interpreted as causing a target state of the internal argument (e.g. the door). The state consists in the internal argument standing in a HAVE-relation to one or more entities. This is a productive pattern, exemplified in *(be)-pflastern* (to pave), *be-pflanzen* ('to plant (a flower-bed)'), *bestuhlen* (Stuhl (= chair); 'provide with seats') etc. The *ung*-nominals of this type are three-fold ambiguous. E.g. in (3) *Die Bemalung* has (a) an event-reading, (b) a 'target state'- reading and (c) an entity-reading, the actual flowers. In *die Pflasterung* (the pavement) it is the root √pflaster that provides an entity discourse referent of the sort 'pavement'. We dub these roots 'sortal roots'. Here it is the kind of pavement that can be further specified by a *mit*- (with)-phrase, e.g. *den Platz mit Ziegeln pflastern* (to pave the square with tiles). (Forming vP, the root √pflaster, argument of P (*be-* or ∅) head-moves to P; P head-moves to v.) (1) is an instance of type1 where the verbal root functions as individual property of the internal argument during the target state. Type1-constructions have only event and target state readings. Examples of type2 constructions are *mischen* (to mix), *bilden* (to build), *sammeln* (to collect). Their *ung*-nominals have only 'target-state'- and entity-readings. The syntax of type2 constructions is similar to (3). The roots introduce an entity which is brought into existence by the event. E.g., the nominalisation of *Zement mischen* (to mix the cement-mass), i.e., *Mischung* denotes the cement-mass created during the mixing event. In semantics construction the variable v introduced by the root √misch becomes identified with the variable introduced by the internal argument.

N.B. Many roots are flexible in what they contribute to the verbal constructions. Examples will be presented during the talk. I will also discuss evidence for the syntactic structures that is provided by adjectival modification and disjoint reference effects.
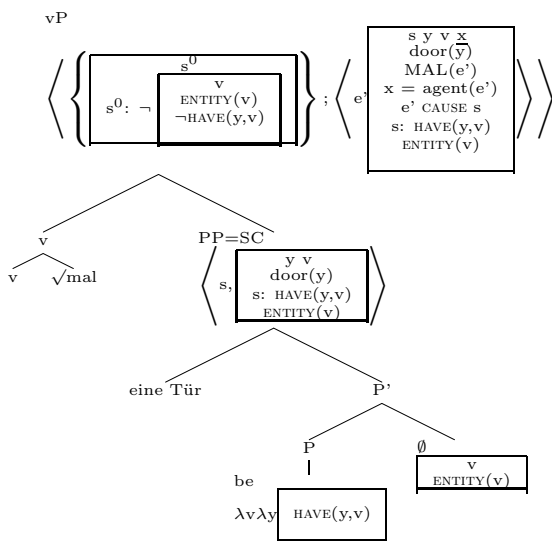
(1) Trocknung   der Biomasse
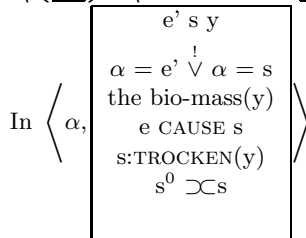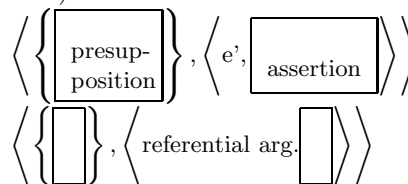   dry-*ung* of the bio-mass

(2) eine Blume malen
    a   flower paint

Tree diagram (1):

DP

D / NP

$\left\langle \left\{ \begin{array}{c} s^0 \\ s^0:\neg\text{TROCKEN}(y) \end{array} \right\} \left\langle \alpha, \begin{array}{c} e'\ s\ y \\ \alpha = e' \overset{!}{\vee} \alpha = s \\ \text{the bio-mass}(y) \\ e\ \text{CAUSE}\ s \\ s:\text{TROCKEN}(y) \\ s^0 \supset\subset s \end{array} \right\rangle \right\rangle$

n — ung

vP

$\left\langle \left\{ \begin{array}{c} s^0 \\ s^0:\neg\text{TROCKEN}(y) \end{array} \right\} \left\langle e', \begin{array}{c} s\ y \\ \text{the bio-mass}(y) \\ e'\ \text{CAUSE}\ s \\ s:\text{TROCKEN}(y) \\ s^0 \supset\subset s \end{array} \right\rangle \right\rangle$

v:en $\langle e', \square \rangle$

rP

$\left\langle s, \begin{array}{c} y \\ \text{the bio-mass}(y) \\ s:\text{TROCKEN}(y) \end{array} \right\rangle$

DP — die Biomasse

$\begin{array}{c} y \\ \text{the bio-mass}(y) \end{array}$

r — √trocken

$\lambda y.\ \text{TROCKEN}(y)$

Tree diagram (2):

vP

$\left\langle \left\{ \begin{array}{c} s^0 \\ s^0: \neg \begin{array}{c} y \\ \text{flower}(y) \end{array} \end{array} \right\} , \left\langle e', \begin{array}{c} s\ y\ \underline{x} \\ \text{res}(s,e') \\ s:\text{EXISTS}(y) \\ \text{flower}(y) \\ \text{MAL}(e') \\ x = \text{Agent}(e') \\ s^0 \supset\subset s \end{array} \right\rangle \right\rangle$

DP — eine Blume

$\begin{array}{c} y \\ \text{flower}(y) \end{array}$

v

$\left\langle e', \begin{array}{c} \underline{x} \\ \text{MAL}(e') \\ x = \text{Agent}(e') \end{array} \right\rangle$

v

$\langle e', \square \rangle$

√mal

$\lambda e \begin{array}{c} \underline{x} \\ \text{MAL}(e) \\ x = \text{Agent}(e) \end{array}$

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

Tree diagram (3):

vP

$\left\langle \left\{ \begin{array}{c} s^0 \\ s^0: \neg \begin{array}{c} v \\ \text{ENTITY}(v) \\ \neg\text{HAVE}(y,v) \end{array} \end{array} \right\} ; \left\langle e', \begin{array}{c} s\ y\ v\ \underline{x} \\ \text{door}(\underline{y}) \\ \text{MAL}(e') \\ x = \text{agent}(e') \\ e'\ \text{CAUSE}\ s \\ s:\ \text{HAVE}(y,v) \\ \text{ENTITY}(v) \end{array} \right\rangle \right\rangle$

v

v — √mal

PP=SC

$\left\langle s, \begin{array}{c} y\ v \\ \text{door}(y) \\ s:\ \text{HAVE}(y,v) \\ \text{ENTITY}(v) \end{array} \right\rangle$

eine Tür

P'

P — be

$\lambda v \lambda y\ \text{HAVE}(y,v)$

∅

$\begin{array}{c} v \\ \text{ENTITY}(v) \end{array}$

Please read as follows: s. (Genabith, Kamp and Reyle 2006)

$\left\langle \left\{ \boxed{\begin{array}{c}\text{presup-}\\\text{position}\end{array}} \right\} , \left\langle e', \boxed{\text{assertion}} \right\rangle \right\rangle$

$\left\langle \left\{ \square \right\} , \left\langle \text{referential arg.} \square \right\rangle \right\rangle$

In $\left\langle \alpha, \begin{array}{c} e'\ s\ y \\ \alpha = e' \overset{!}{\vee} \alpha = s \\ \text{the bio-mass}(y) \\ e\ \text{CAUSE}\ s \\ s:\text{TROCKEN}(y) \\ s^0 \supset\subset s \end{array} \right\rangle$

read '$\alpha = e' \overset{!}{\vee} \alpha = s$' as: "the noun either denotes (the) e'(vent) or (the) s(state)"

'$\supset\subset$' : 'temporally abuts'

'res(s,e')': " s is the resultant state of e' "

$\underline{x}$, x = agent(e): instruction of introducing an agent in Spec of voiceP

References

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Marantz, A.: 1997, No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon, *Penn Working Papers in Linguistics*, Vol. 42, pp. 201–205.

Marantz, A.: n.d., Objects out of the lexicon: Objects as events. Handout. June 11, 2005.