

# When roots license and when they respect semantico-syntactic structure in verbs

In this talk I will present a way of constructing DRT-based semantic representations of verbs from specifications of their roots. I assume three basic types of roots: (a) *event* denoting roots, (b) *property* denoting roots and (c) *sortal* roots; roots of this third type denote various sorts of entities: material objects, spatial regions, configurations, laws, etc. The sort of entities denoted by a root makes it suitable to be selected by v(erb)al a(dj)ectival or n(om)inal functional heads in large numbers without excluding other insertion configurations.

## some common types of verbal construction in German

(a) The semantico-syntactic differences between unergative and unaccusative verbs witness the assumption that the former are unary predicates built from event denoting roots, whereas the latter denote relations between an event discourse referent and an individual discourse referent. Compare the root entries in (1) and (2). The specifications of the roots appear as right-most leaves of the trees representing the constructions. The underlined letters appearing in argument positions in these root specifications indicate argument slots. Argument slots are not arguments, but must be filled by arguments in the course of the construction of well-formed verbs and phrases. In our DRT-based terminology arguments are always discourse referents. Arguments filling the slots in root specifications are either introduced by functional heads that enter into the construction of verbs from roots or by argument phrases. For instance, in both (1) and (2) the verbaliser head *v* introduces a discourse referent *e'* (denoting a process) which fills the slot *e*. On the other hand the argument slot *y* of the root  $\sqrt{\text{steig}}$  is filled by the discourse referent *Y* that is contributed by the argument phrase *der Drachen* (the kite). The filling of argument slots by arguments is effected by the operation MERGE which is responsible for combining constituents in the process of building sentences from roots. There is a crucial difference between (1) and (2): in (2) the sentence subject is 'verb-internal' whereas in (1) the subject is made available at the higher projection voiceP (Kratzer 1996). Introduction at the level of voiceP leads to an agentive interpretation of the verb, with the subject argument as agent or causer. Internal subjects lead to non-agentive interpretations.

(b) Property denoting roots like  $\sqrt{\text{full}}$  (as in the German adjective *voll*) enter verbal constructions as the head of a rootP, see (3). The denotation of the rootP is a state *s*, which enters the structure as the eventuality discourse referent where the proposition FULL(*Y*) is true.<sup>1</sup> MERGE of the state denoting rP with *v* is interpreted as 'e' CAUSE *s*' (cf. (Marantz 2005)). (Anti)causative verbs are bi-eventive, and vice versa.

(c) Sortal roots like  $\sqrt{\text{deck}}$  (cover) or  $\sqrt{\text{lad}}$  (load) enter verbs via a prepositional root, see (4), (4) exemplifies a common structure for German prefix verbs. As in (3), the rootP expresses a stative predication, with the effect that the MERGE of rootP and *v* introduces a causative relation between activity *e'* and result state *s*. The sortal root is selected by the P-head. It is in P's complement position, from where it moves to P and P to *v* (omitted in the structures). The second argument, P's relans in the specifier of P is the direct object of the verb.<sup>2</sup>

In these very common verb-formation patterns property-roots and eventive relational roots license semantico-syntactic structure, whereas sortal roots respect semantico-syntactic structure. These examples can be compared with cases where the root directly modifies the *v*-head. The root merges with *v* without functioning as the head of a phrase or being selected by a prepositional head.

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<sup>1</sup>The roots do not denote states themselves. *der Zustand leichter Trockenheit*, where *leicht* (slightly) modifies the property *trocken* is wellformed, but *\*der leichte Zustand der Trockenheit* (lit. the slight state of dryness) is ungrammatical.

<sup>2</sup>Different from (Harley n.d.) P does not select a nominal head. The denotation of the root FUNCTIONS-AS what may be described in a *mit*-phrase. But although the set of kisses in *die Hand mit Küssen bedecken* (to cover the hand with kisses) functions as a cover, a set of kisses cannot be described in terms of *cover* or Germ. *Decke*, respectively.

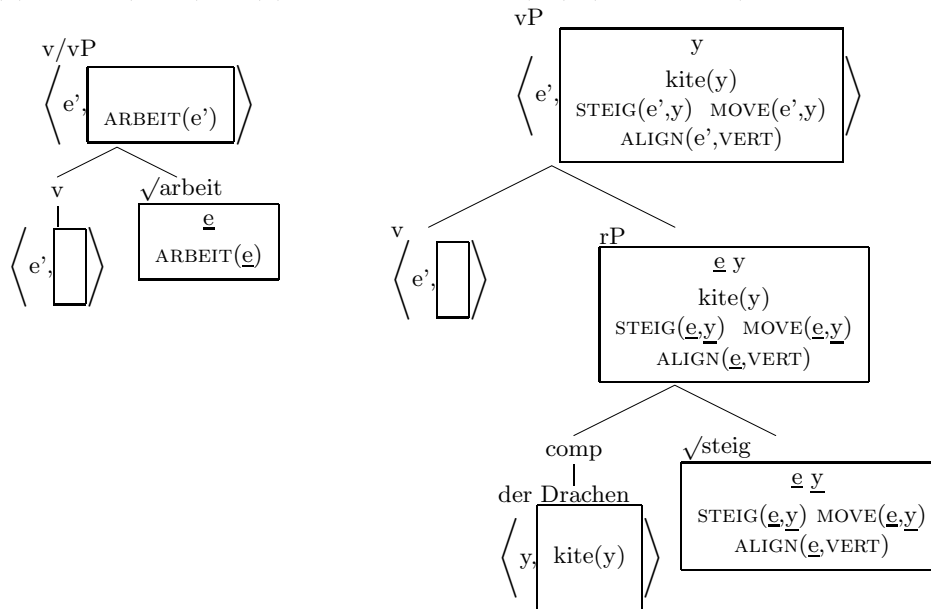
## roots directly modifying v

An instance of such direct modification is an alternate of *Johnny Depp füllte die Kinokassen (mit Geld)* (J.D. filled the cinema's cash boxes), namely *Johnny Depp füllte Geld in die Kinokassen* (lit. J.D. filled money into the cinema's cash boxes), which although grammatical in German can only be interpreted as follows: J.D. has a bucket full of coins and small notes and pours them into cash boxes. This is so because direct objects in this construction are restricted to stuff that can be poured. This, I want to argue for, is a consequence of the construction. These constructions denote activities of some agent such that the participants are under direct and continuous control of the agent. In the alternate J.D. directly manipulates the coins and it is his decision when to stop. No such direct controlled manipulation is provided in the causative construction (3). My analysis of the alternate is displayed in (5). The the  $\sqrt{\text{full}}$  directly merges with v in the sense of (Embick 2004). On the semantic side of the representation this is modeled as follows: e' inherits the label FULL from the root-lexicon. The binding condition  $\underline{y}$  is filtered out. It will never be satisfied. The constructed vP presents an intransitive, unergative verb passing the *und,und* test in (Kratzer 2005). See *die Kellnerin stellte zwei Gläser hin und fing an, den Tequila einzufüllen, und füllte, und füllte.* (google) (the waitress placed two glasses and started [into] filling the tequila and poured and poured). N.B. *einfüllen* in this example is a particle construction also built via adjunction of a particle phrase at vP. In the particle constructions the particle provides the argument slot for the direct object (the tequila). In (5) the direct object is adjoined via P-adjunction (cf. (Marantz 2005)), where the empty P head contributes an unspecified relation REL( $\underline{e},m$ );  $\underline{e}$  is bound by e', when the PP and vP are merged. m is interpreted as related to e' and intended to go into some container. But in contrast to (4) the cash boxes in (5) might never become full. Merging the vP with the two PPs the interpreter must make sense of some agent's intentional activity. The interpretation is predictable as describing an activity of the kind that can be perceived during internal intervals of situations to be described with the help of causative *füllen*. But those situations are special: the agent must have direct control over the stuff. Such activities can only be observed in pouring situations.

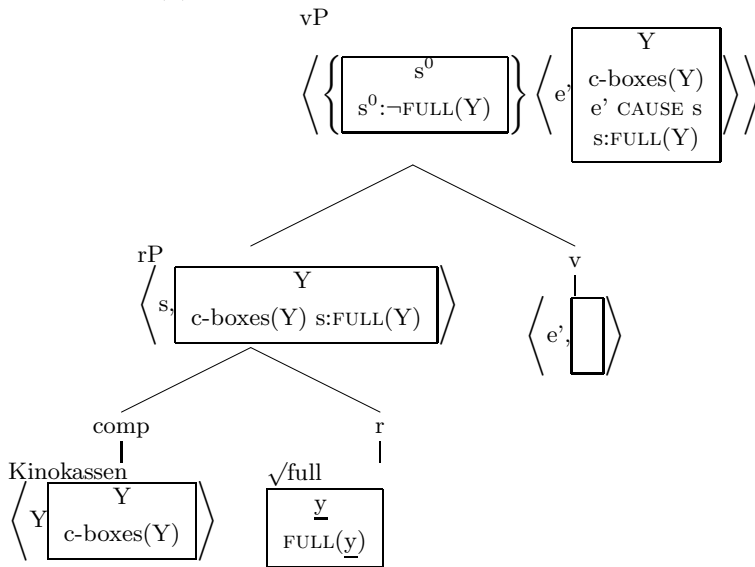
We expect the following properties of constructions based on such labeled v-heads: (i) the events denote activities of an intentional agent. We can view this restriction as a structural effect. The verbaliser v has no selective requirements except denoting an activity. Consequently only agents which can be introduced and bound in voiceP can become subjects. (ii) The stuff or entities selected for direct objects must qualify for being directly manipulated by an agent.

For evidence of (i) I will discuss the German particle construction *absteigen* (to climb down) from (Kiparsky 1997). In this construction the relational eventive root  $\sqrt{\text{steig}}$  enters the construction of *absteigen* directly as a label. Note that the unaccusative *steigen* selects material objects, stuff, value etc. for subjects, see *der Drachen/die Flut/der Preis steigt* (the kite/the flood/the prize rises). But *absteigen* only allows agents for subjects, compare the ungrammatical *\*der Drachen/die Flut/der Preis steigt ab*. Kiparsky's analysis of *absteigen* doesn't account for this restriction. Evidence for (ii) can be provided by German *aufschließen*, where the particle *auf* (to become open) is combined with *schließen*. *schließen* on its own must be interpreted as causative or (anti)-causative, see *den Kreis/das Auge/den Spalt/die Tür/die Truhe/ schließen*, following the word-formation pattern in (3). Anything can be selected for internal argument, if it only qualifies for  $\neg$ open: circles, eyes, fissures, doors, chests, etc. But in the particle construction the root  $\sqrt{\text{schließ}}$  directly merges with v and only labels an action. The direct object argument is licensed by *auf*. Now the direct object must qualify for the requirement of two heads: First, it must respect *auf*'s requirements, i.e. being open or  $\neg$ open. Circles, eyes, fissures, doors, chests qualify for that. Second, they must respect the restrictions of the labeled action head SCHLIESS(e'), i.e. they must qualify for direct and controlled manipulation by an intentional agent. Doors and chests respect that, but circles, eyes, fissures don't. This is why *\*den Kreis/die Augen/den Spalt aufschließen* is ungrammatical.

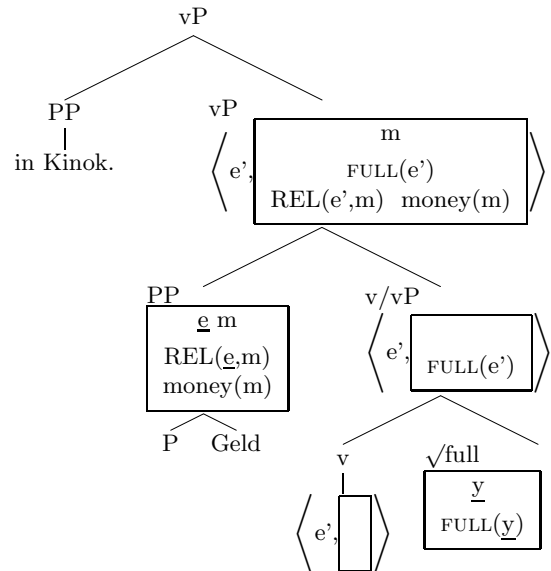
- (1) *arbeit* (work)      (2) *der Drachen steig(en)* (ascend kite)



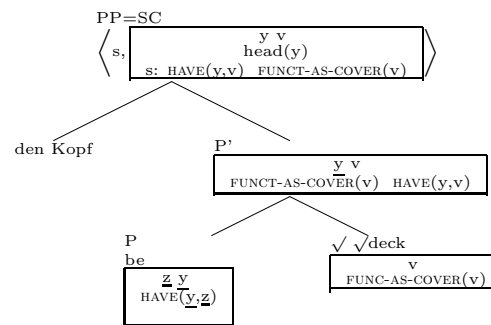
- (3) *Kinokassen füllen*



- (5) *Geld in Kinokassen füllen*



- (4) *den Kopf bedecken* (to cover the head)



## References

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