Theta-Head Binding in German Locative Alternations
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Empirical realm and main claims: In this talk, we compare German structures with Free Landmark Datives (Ground Locative Datives; FLD) as in (1) (Hole 2014) with the locative alternation of the *spray/load*-type with *be*-prefixation as in (2).

(1) **der Kamera**   *die Linse zuhalten*   (2) **den Kuchen** *mit   Eigelb   **be**-streichen*
    the camera$_{DAT}$ the lens hold.closed   the cake$_{ACC}$ with egg.yolk   *be*-smear
    'hold the camera lens closed'   'coat the cake with egg yolk'

base: *die Linse zuhalten*   *Eigelb auf den Kuchen streichen*

We argue that both structures involve obligatory variable binding in a local domain which is triggered by the Landmark theta-head: Antecedent Landmark DPs bind the possessors of neighborhood region PPs. The idiosyncrasies of *be*-prefixed structures are attributed to *be-*, which starts out as a defective preposition and then head-moves to the verb in two steps, much in the spirit of Svenonius (2003), Biskup et al. (2012) and, more distantly, Wunderlich (1987).

Theoretical significance: The core of the proposed mechanism elaborates Kratzer's (2009:194) proposal to implement reflexivity in an agent-severed system that centers around verbal functional heads which introduce bare binder indices into the structure. We extend this proposal beyond FLDs (Hole 2014) to the *be*-marked Locative Alternation. This extension forms part of a larger endeavor to demonstrate the necessity to describe quite a few well-known argument alternations as depending on the presence of binder theta-heads.

Data: FLDs obligatorily bind a possessor variable in a local domain. In (1), the bound variable forms part of the bridging definite *die Linse*, which is obligatorily interpreted as 'its lens', with the possessor variable bound by *der Kamera*. In each and every case, the bound variable can *salva veritate* be made explicit as in (3). The same holds true of the reference to the neighborhood region SURFACE/OUTSIDE with productive instances of *be*-prefixations, as shown in (4). (SURFACE and OUTSIDE are taken here to be instantiations of a single neighborhood region. Curly brackets indicate material that is, we assume, PF-optional, but semantically active irrespective of its pronunciation.) In cases in which neighborhood regions other than SURFACE, typically INSIDE, co-occur with *be*-prefixed verbs, we are dealing with non-productive uses of *be-*; cf. the unpredictable behavior of cases relating to INSIDE in (5) vs. (6). (7) is a case of productive *be*-prefixation like (4), and it renders explicit the restriction to SURFACE/OUTSIDE.

(3) **der Kamera$_i$** *ihre$_i$ Linse zuhalten*   (4) **den Kuchen$_i$** {*an seiner$_i$ Oberfläche*}*mit Eigelb**be**-streichen*
    the camera$_{DAT}$its lens hold.closed   the cake$_{ACC}$ at its   surface   with egg.yolk *be*-smear
    'hold the camera lens closed'   'coat the cake with egg yolk at its surface'

(5)*das Loch* {*innen*} *mit Wachs **be**-stopfen* (6) *den Tank* {*innen*} *mit Benzin **be**-füllen*
    the hole$_{ACC}$ inside with wax *be*-stuff   the tank$_{ACC}$ inside with gasoline *be*-fill
    int.: 'stuff the hole with wax'   'fill the tank with gas'
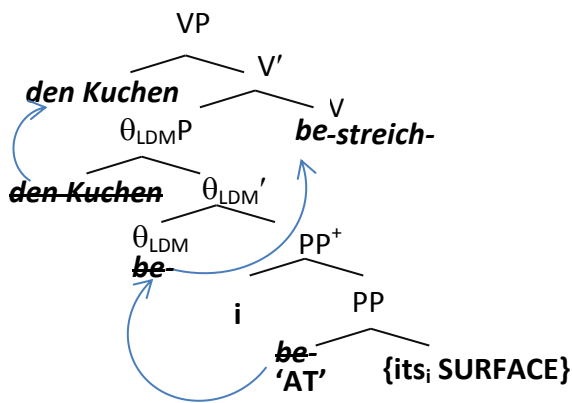
base: *Wachs in das Loch stopfen*   *Benzin in den Tank füllen*

(7) *das Buch* {*von außen/*von innen*}   **be**-*malen*
    the book$_{ACC}$ from outside/from inside *be*-paint
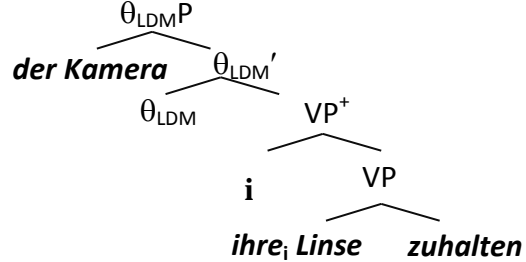   'paint the book {from the outside/*on the inside}'

We propose syntactic representations for (2) (productive *be*-prefixation/ Locative Alternation) and (1) (FLDs) as in (8), where the subtrees around the Landmark theta-heads are identical in all relevant respects. (For simplicity, (8b) does not represent the syntactic derivation of the particle verb *zu-halten* 'hold closed'.)
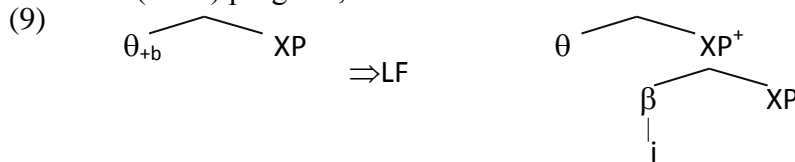
(8) a. Productive Locative Alternation with *be-*   b. Free Landmark Dative (cf. Hole 2014)

VP
den Kuchen — V′
θ_{LDM}P — V *be-streich-*
den Kuchen — $\theta_{LDM}′$
θ_{LDM} — PP$^+$
be-
i — PP
be- 'AT'   {its$_i$ SURFACE}

θ_{LDM}P
der Kamera — $\theta_{LDM}′$
θ_{LDM} — VP$^+$
i — VP
ihre$_i$ Linse   *zuhalten*

In (8a), *be-* starts out as a preposition with a general AT meaning. It head-moves, and incorporates into the Landmark theta-head. In this position, it can select for the SURFACE PP, thereby satisfying the restriction on productive *be*-uses (see below for compositional details). *Be-* then moves up further to satisfy its affixal needs. The Landmark head (little p in Biskup et al 2012) enters the derivation with a binder feature [+b] which leads to structure expansion along the lines of Hole's (2014) Generalized Binder Rule in the tradition of Büring's (2005) Binder Rule; cf. (9). Spelling out Kratzer's (2009) program, it is tied to a verbal functional head/a theta-head.

(9)
θ_{+b} — XP $\Rightarrow$LF θ — XP$^+$
β — XP
i

The ensuing structure can be interpreted with standard machinery (FA, predicate abstraction, (Davidsonian) predicate modification; derivation not shown here). The simplified denotations of O$\theta_{LDM}\Pi$ and O*be*-Π are given in (10a/b). The result of function composition of θ_{LDM} and *be-* – the result of incorporation of *be-* into θ_{LDM} – is provided in (10c).

(10) a. O$\theta_{LDM}\Pi=\lambda x.\lambda s.\exists s′[s$ holds in the neighborhood of x(s′) & s is part of s′]

b. O*be*-$\Pi=\lambda x.\lambda y.\lambda s.y$ is at x(s)   c. O$\theta_{LDM}\Pi\circ$O*be*-$\Pi=\lambda x.\lambda y.\lambda s.\exists s′[s$ holds in the neighborhood of y(s′) & y is at x(s) & s is part of s′]

The meaning of θ_{LDM}P in (8a) will then be '$\lambda s.\exists s′[s$ holds in the neighborhood of the cake(s′) & s holds at the cake's surface & s is part of s′]'. (*notabene*: none of the conjuncts of (10c) is redundant; in fact, their conjunction guarantees that the complete cake, and not just some part of it, is involved in the eventuality.) The DP *den Kuchen* inserted in Specθ_{LDM} moves up to VP to check its case features in the V-Voice system. In (8b) *der Kamera* enters the derivation in the specifier of the θ_{LDM} with the binder feature [+b] that requires binding of some variable in its local domain. Evidence supporting the general presence of a semantic binding configuration in (8a) as in (8b) comes mainly from three sources: (i) the PP containing the bound variable may invariably be made explicit; (ii) quantified Landmark DPs co-occur with singular PP complements that obligatorily receive a distributed reading; cf. (11); (iii) if possessive pronouns are used as in (3)/(4), they invariably receive a bound reading, despite the possibility to use possessive pronouns anaphorically in other contexts of German (not shown here).

(11) [*jeden Kuchen*]$_i$ *an seiner$_i$ Oberfläche mit Eigelb* **be***-streichen* 'coat each cake with egg yolk at its surface'

In sum, our approach to the alternation with *be*-prefixed verbs combines two strands of research and shows the pervasive activity of the Landmark theta-head in its binder guise.

Selected references: Hole, D. 2014, Dativ, Bindung und Diathese. Berlin: de Gruyter. ● **Kratzer**, A. 2009, Making a pronoun. *LI* 40 ●

Wunderlich, D. 1987, An investigation of lexical composition: the case of German *be-* verbs. *Linguistics* 25. **Biskup** P. **& Putnam** M. 2012, One p with two spell-outs. *Linguistic Analysis*.