The Meaning of P 2012
Cartography and polysemy of spatial Ps. The case of *in* in English.
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# 0. Preliminary questions and goals

Goal: To show that the polysemy of Ps is due to the fact that lexical items can lexicalize different chunks of the structure.

- Different examples of *in* in spatial cosntructions:

> (1) a. The ball is **in** the box.
> b. The ball is **in**side.
> c. John is **in** front of the door.
> d. John fell **in** (the pool).
> e. John fell **in**to *(the pool).
> f. She is **in** here.

- Tools:

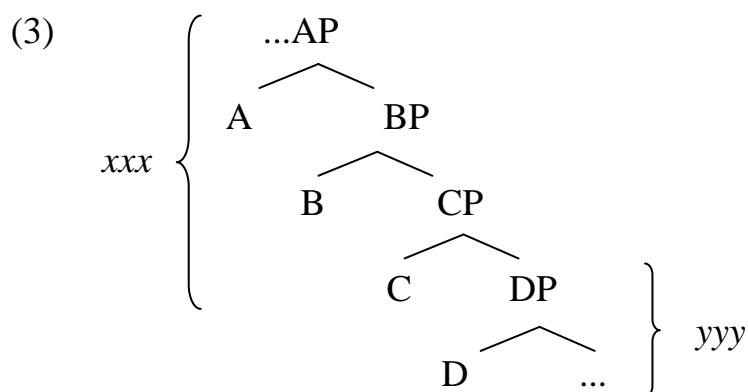**a. Cartography → a syntactico-semantic structure** (Svenonius 2010)

(2)
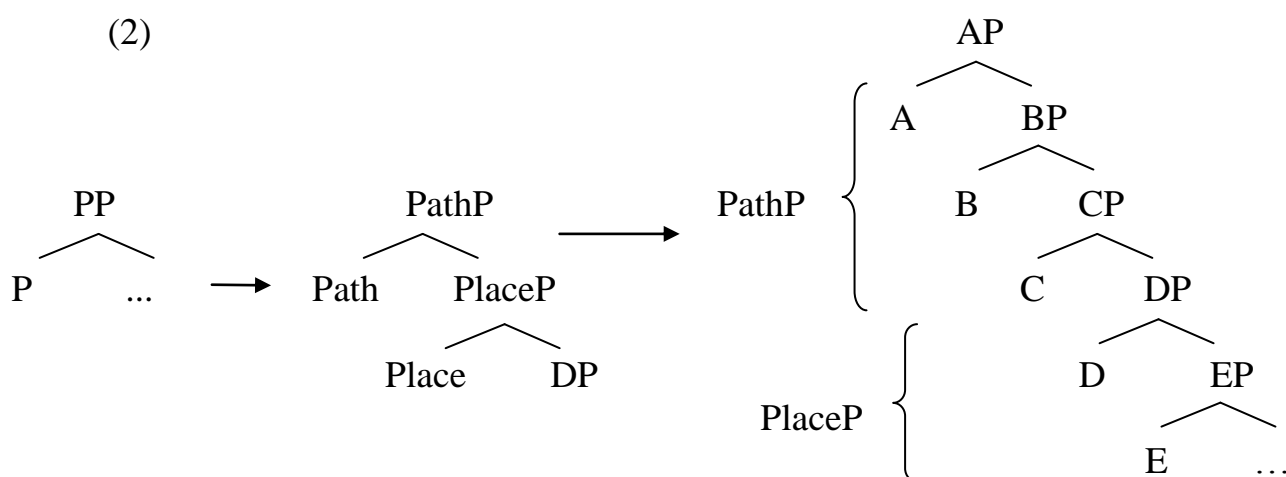
Jackendoff (1973, 1977)   Jackendoff (1983)   Koopman (2000), Den Dikken (2010), Svenonius (2010), Pantcheva (2011)...

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b. Phrasal spell-out (Starke 2009, 2011, a.o.)

(3)

```
            ...AP
           /    \
         A        BP
  xxx {          /  \
              B      CP
                    /   \
                  C      DP
                        /   \   } yyy
                      D       ...
```
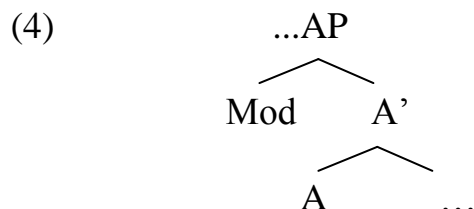
→ postsyntactic lexicalization: it just gives phonological content
→ Extended Exhaustive Lexicalization Principle (adapted from Fábregas 2007, a.o.): every syntactic feature must be lexicalised by a lexical item, ~~even if this item is phonologically null.~~

→ Syntactic projections are submorphemic (Starke 2011)

c. Terminals and Modifiers

(4)

```
            ...AP
           /    \
        Mod      A'
                /  \
              A     …
```

→ The modifier can be lexicalized together with the terminal or not.

→ The result is a fine-grained structure where every semantic component is located in a very well defined position in the syntactic structure.

Two main ideas:

→ **A same lexical item can lexicalize different parts of the structure, if there is no other lexical item available in the repertoire of the language. This triggers polysemy.**

→ The lexical item *in* in English can lexicalize different chunks of the structure in English, which generally contain a similar semantic feature related to interiority.
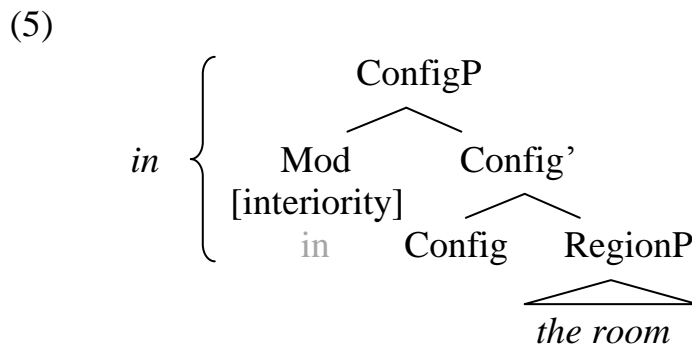
1. Different positions of "Ps" in the structure

Tolskaya (2007): "the differences in meaning are claimed to arise from different syntactic positions, while the lexical entry [...] remains the same"

1.1. Different positions for *in*

a. Locative construction → *John is **in** the room*

- My claim: *in* lexicalizes *Config* and a Modifier of *Config* (*Mod,Config*), which determines that the location expressed by *Config* corresponds to an inner part:

(5)

```
                      ConfigP
                     /       \
  in  {        Mod            Config'
          [interiority]       /      \
                in        Config   RegionP
                                   /       \
                                  the room
```

Region: it takes an entity and returns the points of the space this entity occupies (Wunderlich 1991)

Config: it takes a Region and returns a spatial configuration on its basis. Here is where the notions of containment, attachment and support are encoded (in line with *p* in Svenonius 2010).

→ the interpretation is that the spatial configuration is related to the interior part of the Region

- *Config* lexicalized by Ø? → NO!

- Extended Exhaustive Lexicalization Principle.

- This explains *intransitivity → only possible when *in* is a modifier.

- Languages in which there are neutral locatives that can be modified by other elements:

(6)   Greek:

   Kathomun **epano s**ton Petro.
   was-sitting-1s on *se-* the Peter-acc
   'I was sitting on John.'
                        Terzi (2010:198)
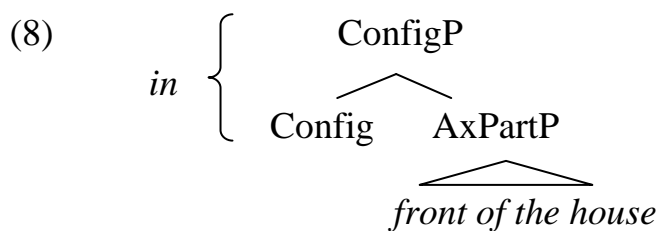

(7)   Norwegian:

   Katten er **inne i** huset.
   cat.the is in in house.the
   'The cat is inside the house.'
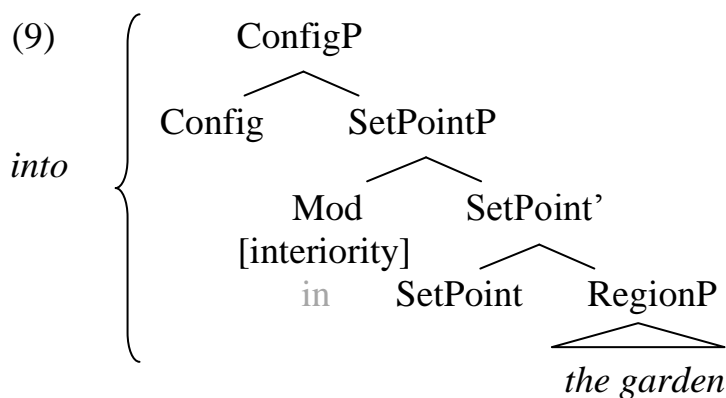   Tungseth (2008:44)

b. *Ax(ial)Part* locative construction→ *John is **in** front of the house*

- Here there is no meaning of interiority. *In* is a defective locative element lexicalizing just *Config* like *se* in Greek, *i* in Norwegian or *en* in Spanish:

(8)
```
              ConfigP
   in   {    ⌒
         Config    AxPartP
              ⌒
         front of the house
```

c. Directional construction → *John went **in**to the garden*

- In English, *in-* in *into* corresponds to a Modifier of *SetPoint*.

(9)
```
              ConfigP
         ⌒
   Config      SetPointP
              ⌒
into  {   Mod        SetPoint'
      [interiority]      ⌒
         in    SetPoint    RegionP
                        ⌒
                    the garden
```

SetPoint: it takes a Region and makes it be understood as belonging to a Set or Path.

- As a modifier, *in* gives the meaning that this point that belongs to a set of points is an inner place.[2] Thus, it entails that the Region is an inner place, but, as it is an entailment, it doesn't mean that the structure is [to[in]].

- The structure in (9) goes against the traditional structure:

(10)   [Path TO ([Place IN ([Thing ROOM])])]

Jackendoff (1990:45)

(11)

PathP
Path   PlaceP
to
       Place   ThingP
       in   *room*
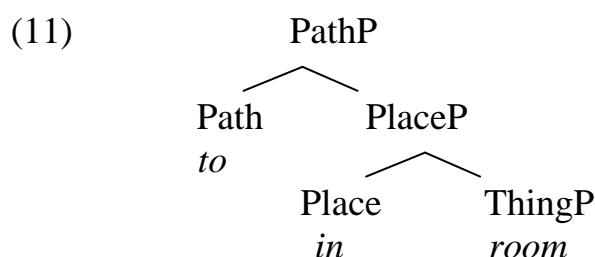
- In line with Noonan (2010):

(12)   a. She fell in (the pool).
       b. She ran to *(the tree).

(13)   a. *She jumped/ran into.
       b. *It fell into.

Noonan (2010:179)

- If *in* can behave as intransitive is (12)a, why can't it in (13)b?

(14)   a.   ...VP   b.   …VP
          V   PlaceP   V   PathP
          fell   *fell*
               Place   DP   Path   PlaceP
               in   *(the pool)*   *to*
                                                    Place   DP
                                                    in   *(the pool)*

→ Noonan (2010): *to* is locative and *in* is a Path modifier:

(15)   ...PathP

```
            ...PathP
           /      \
        Mod       Path'
        in       /     \
              Path      PlaceP
              PATH      /     \
                     Place     DP
                      to     the pool
```

→ In my account *to* lexicalizes *SetPoint*, which is related to her *PathP*. Again *in* is just a modifier. The impossibility of intranstivity is the same as for *to*.

- Other problem for Jackendoff's structure in Noonan (2010):

(16)   a. *She put the boxes to the tree.
           b. She put the book into the box/onto the wardrobe.
                          Noonan (2010:180-181)

- If *into* can combine with *put,* why can't *to*?

(17) a.   ...VP   b.   …VP

```
a.      ...VP                        b.        …VP
       /     \                                /     \
      V      PathP                          V       PathP
     put    /     \                        put     /     \
         Path      PlaceP                       Path      PlaceP
          to      /     \                        to      /      \
              Place      DP                          Place       DP
               in      the box                        Ø        the box
```

→ Noonan: if *in* is just a path modifier the explanation is easier.
     - But she doesn't explain why *put* needs a *Mod,Path* to combine with *to*.

→ In my account I have the same problem. The answer could be that *to* doesn't introduce a locative modifier alone. The same could be said for the following example:

(18)   The band is playing 60 meters *(in)to the woods

- Also in Noonan (2010): It is not possible to have elements like *underto, *overto or *behindto because these elements are not Path-modifiers in English.

→ Different properties: projective? more phonological content? extended?

- Noonan (2010:180): "intransitive prepositions (particles) are restricted to Path elements that involve an abstract (silent) $P_{LOC}P$."

    (19)   He is in *(the house/the pool/the kitchen/ . . .).

<div align="right">Noonan (2010:180)</div>

→ My claim: Elements that lexicalize *Config* are always transitive.

    - Intransitive elements are modifiers.

    (20)   …ConfigP

             Config   RegionP   → X *(DP)

               X   DP

→ it is possible to have elements with a Ground: *inside*,[3] *in between*.

→ it is also possible that *in* is a modifier in locative constructions with deictics:

    (21)   in here, under here, up there

- For Kayne (2004) the meaning of expressions like *in there* and *under here* is 'here, under something' and not 'under this place'. For him, thus, the deictic doesn't correspond to the Ground of elements like *in* or *under*.

→ In my account, it is not just the Ground: it lexicalizes *Config* and *in* is a modifier.

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[3] There are differences between *in* and *inside* as pointed out in Svenonius (2010:note 3)

(22)

```
                    ConfigP
                 ┌─────┴─────┐
               Mod        Config'          ⎫
               in      ┌─────┴─────┐       ⎬   here
                     Config    RegionP…    ⎭
```
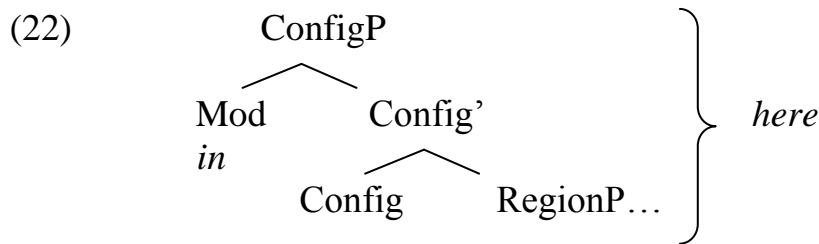
In sum:

→ Elements like *in* can only be intransitive when they are modifiers. To be modifiers, in locative constructions they need that other element lexicalizes *Config*.
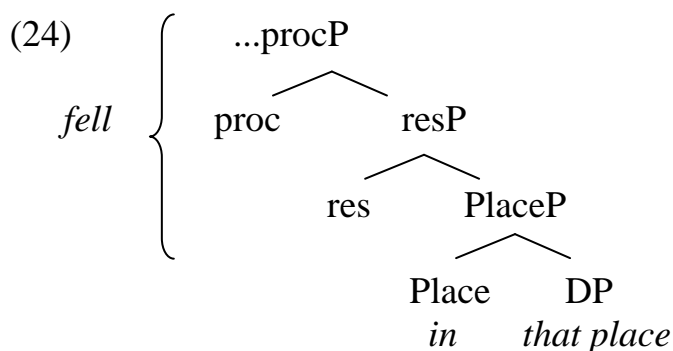
→ This should explain why it is possible to have *She fell in* → *in* is a modifier here.

d. Directional construction with intransitive elements → *She fell in*.

    (23)   a. Smell the well! I think an opossum must have fallen **in** (it).
            b. Smell the well! I think there must be a dead opossum **in** *(it).
                                  Svenonius (2010:152)

- In Ramchand (2008) *fall* is an *init, proc, res* verb (cf. Ramchand 2008:78)

    → It combines with locative Ps giving a result (Pantcheva 2007, Ramchand 2008)[4]

(24)

```
           ⎧        ...procP
           ⎪      ┌────┴────┐
     fell  ⎨    proc      resP
           ⎪          ┌────┴────┐
           ⎪         res      PlaceP
           ⎩               ┌────┴────┐
                         Place     DP
                          in    that place
```

- If *in* lexicalizes *Place*, which is a terminal head parallel to *Config*, why is it possible for it to drop the DP in these cases?

→ According to my previous claim: *in* is a modifier in intransitive cases.

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[4] See also the Structural Ambiguity Hypothesis (Gehrke 2008) and the Extended Structural Ambiguity Hypothesis (Real Puigdollers 2010).
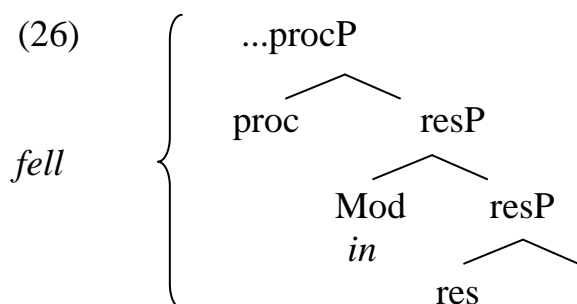
→ *in,* in intransitive cases, is different from *in*, in transitive cases (cf. Thomas 2001), so it is not the case that it drops the DP, but it is a different construction:

> (25) a. *He tumbled/plunged in the pool.
>   b. He tumbled/plunged in.
>
>   Thomas (2001:100)

What does it modify?

> → *res*?:

(26)

fell {
...procP
├ proc   resP
│   ├ Mod   resP
│   │ *in*   ├ res
}

→ It would mean that the result is related to interiority.

→ But why not only verbs with *res*?

- This could be the case of *in* + DP elements, which are modifiers of *res*. It would explain why only verbs with *res* can combine with *in* + DP.

- Its condition of modifier of *res* explains why the directional interpretation of *in*+DP, with intrinsic locative meaning, is lost if it moves together with the DP out of the VP, against *into*, which has intrinsic directional meaning because of *SetPoint*:[5]

> (27)   a. Into/*in this pool John fell.
>   b. The pool into/*in which John fell is extremely deep.
>   (*under the directional reading)   Gehrke (2008:106)

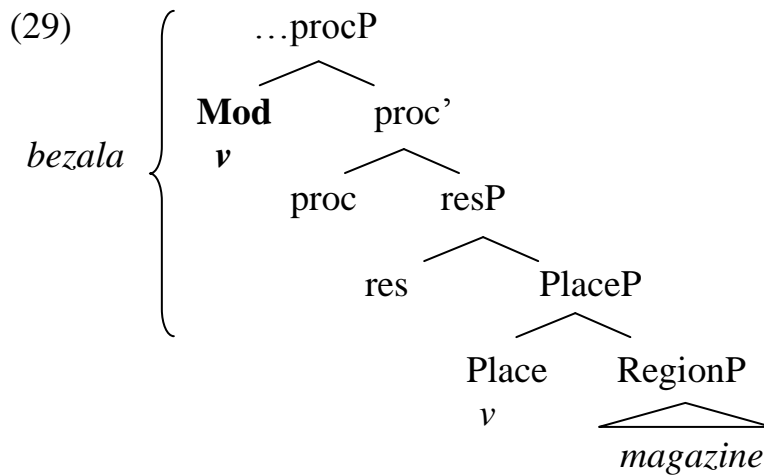- Then, what is *in* modifying in intransitive cases?

→ Could it be a modifier of *proc*? → verbal prefixes:

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[5] Other option is to consider that *in* and the DP are not a constituent (cf. Thomas 2001), but it is not easy to determine the position of the DP in that case. Would it be another *Mod,res*, different from *in*?
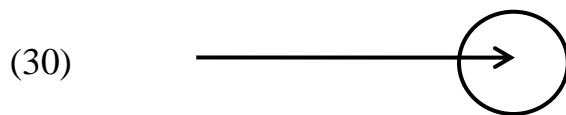
(28) One v-bezala v magazin.
      she V-ran into the shop-ACC
      'She ran into the shop.'

- Following the idea in Svenonius (2004b) that Russian prefixes are phrasal, it is possible to assume that verbal prefixes are modifiers.

(29)

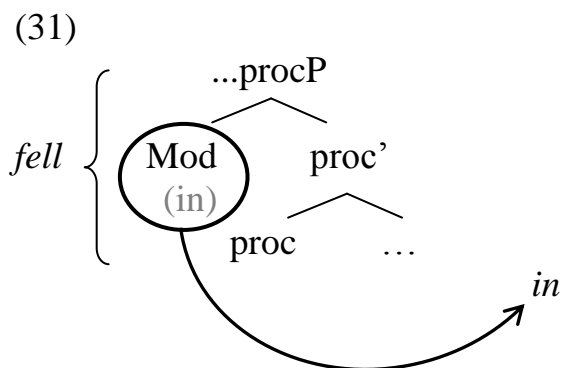*bezala*

```
            ...procP
            /      \
        Mod        proc'
         v         /    \
              proc      resP
                        /    \
                     res     PlaceP
                             /     \
                        Place      RegionP
                          v        /\
                              magazine
```

→ The interpretation is that the process goes to(wards) an inner place:

(30)

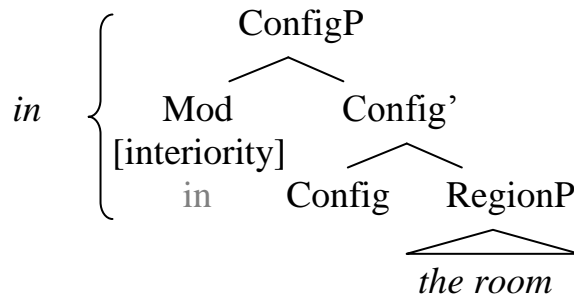→ *in* in cases like *She fell in* could also be a *Mod,proc*.

Why is it lexicalized after the verb?

→ **Slipping**: the process by which the lexicalization of an element needs to move because it is located in the middle of the lexicalization area of another element. (X-[Mod]-Y)
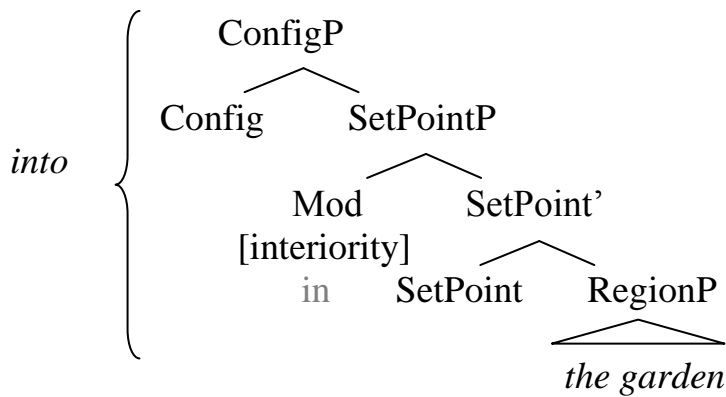
(31)

fell

```
           ...procP
           /      \
       Mod         proc'
       (in)        /    \
              proc      ...
                                  in
```
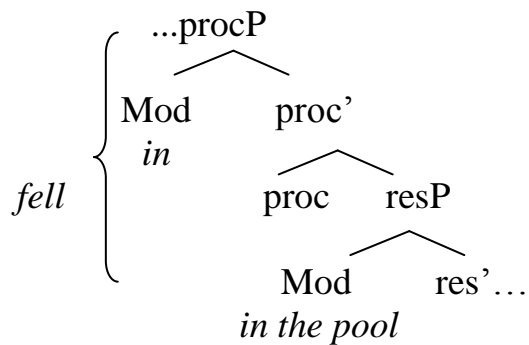
10

Summary:

(32)   *John is in the room*

(33)   *John went into the garden*

(34)   *She fell in (the pool)*

- *in* is an element that lexicalizes a feature related to interiority. Its interpretation depends on its position in the structure. If it modifies:

→ *Config*, the interpretation is that the spatial configuration refers to interiority.
→ *SetPoint*, the interpretation is that the set of points to which the Ground belongs ends in an inner Region.
→ *res*, the interpretation is that the result state is interior.
→ *proc*, the interpretation is that the process ends in an inner Region.

Conclusions

→ **Polysemy is due to the fact that a same lexical item lexicalizes a semantic feature in different positions of the structure**.

→ A cartographic analysis is necessary to determine the exact part of the structure to which a lexical item gives phonological content, allowing the lexicalization of terminals and non-terminals.

→ *in* in English lexicalizes either *Mod* in different positions or *Mod + Config* in locative constructions.

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