Here, there, where
Size tradeoffs in the expression of movement, direction, and location

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Introduction

HTW are PPs

Movement, Direction and Location
  Locative vs directional P (I)
  Locative vs directional V
  Locative vs directional HTW
  Locative vs directional V in Dutch
  Locative vs directional P (II)

Analysis
  LOC-DIR alternation in HTW
  LOC-DIR alternation in P
  BE/HAVE alternation

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▶ classical view: words attach under terminal nodes

(1) PP
    /     
P   DP
   /   |
in  D  NP
 |  |   |
this N place

(2) AdvP
    /   
 Adv
 |
here
nanosyntax: words can spell out complex constituents

(3) LOC P ⇔ here

LOC

DxP

Prox

PLACE
(4) PP
    P
    in
    DP
    D
    that
    NP
    N
    place

(5) LOC
    Dist
    DxP
    PLACE
    ⇔ there
Introduction

(6) PP
   \[ \text{in} \quad \text{DP} \]
   \[ \text{which} \quad \text{NP} \]
   \[ \text{place} \]

(7) LOC
    \[ \leftrightarrow \quad \text{where} \]
    \[ \text{Wh} \quad \text{WhP} \]
    \[ \text{PLACE} \]

\[ \text{here, there, where: HTW} \]
Introduction

- HTW can have either a locative or a directional meaning

(8) She danced there$_{\text{LOC/DIR}}$.

- in the directional sense, HTW realise a larger constituent
- directional HTW is more complex than/contains locative HTW:

(9) \( \text{DIRP} \iff \text{here} \)

(10) \( \text{DIRP} \iff \text{there} \)
Introduction

(11) \( HTW_{\text{DIR}} = [\text{DIR} [ HTW_{\text{LOC}} ]] \)

▶ more size differences:

(12) \( P_{\text{DIR}} = [\text{DIR} [ P_{\text{LOC}} ]] \)
\( V_{\text{DIRM}} = [\text{DIR} [ V_{\text{MOM}} ]] \)
\( \text{DATP} = [\text{DAT} [ \text{ACC} ]] \)
\( \text{IN}_{\text{DIR}} = [\text{DAT} [ \text{IN}_{\text{LOC}} ]] \)
\( \text{HAVE} = [\text{DAT} [ \text{BE} ]] \)
General aim of this paper

- show that the above size differences are related
- they show size tradeoffs: as the size of one element grows, the size of another element in the above list shrinks

(13)

<table>
<thead>
<tr>
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<tr>
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<tr>
<td>go</td>
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<tbody>
<tr>
<td>substitution</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>complement of V</td>
<td>X</td>
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<tr>
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<tr>
<td>take PP complement</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>take <em>right, straight, just</em></td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>locative inversion</td>
<td>X</td>
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</tbody>
</table>
Substitution

- HTW substitute for PPs, not AdvPs

(14)  
  a. He came to my house here when he was in need.  
  b. She lives in Liège there because she likes it there.  

(15)  
  In which town do you live?  
  Where
Subcategorisation

- verbs take NP/PP/VP/AP complements, but hardly any AdvP complements
- HTW can be complements to verbs

(16)  a. Knut studied [NP archaeology].
     b. He focused [PP on the history of art and literature].
     c. Events forced him [VP to find employment].
     d. She made the cake [AP too sweet].

(17)  a. Stella put the fudge cake here/there.
     b. Where do you live?
     c. He came here after work.
     d. They went there to have fun.
Modification of A/Adv

- Adverbs can modify adjectives and other adverbs
- HTW cannot

(18) extremely open, unerringly wise, stunningly beautiful, possibly dead, indisputably adverbial, frightfully slowly

(19) *there ill, *where pessimistic, *here open
NP postmodification

- PPs and HTW can function as nominal postmodifiers
- Adverbs cannot

(20)  
   a. the man on the television, the tables in the garden, the time of the game, the state of affairs at that time
   b. the man here, the tables there

(21)  
*the man carefully, *the tables distantly, *the time quickly, *the state of affairs peacefully
Complement of P

- PPs and HTW can be complements of prepositions
- Adverbs cannot

(22) a. down in the basement, out in the garden, (out) from under the bed, since before Christmas, until after Easter
    b. down here, out there, from where

(23) *down freely, *out openly, *from closely, *since immediately,
    *until lately
PP complements

- PPs and HTW can take PP-complements
- Adverbs cannot

(24) a. at this place in town, at that place at the back, at which place in the barn, at what time in the Spring
b. here in town, there at the back, where in the barn

(25) *closely in town, *distantly at the back, *lately in the Spring
Modification by *right/straight/just*

‘[i]n accepted American speech, the emphatic word *right* modifies only prepositions of space and time, but not other syntactic categories such as adjectives, adverbs, modals, etc.’ (Emonds 1972: 551)

(26) right up the street, right through the door, straight to the post office, just round the corner

(27) a. *He agreed right/straight with me.*
    b. *the conquest right/straight/just of Rome*

(28) a. right here/there
    b. straight here/there
    c. just here/there/where

(29) *right quickly, *straight pessimistically, *just silently, *right frequently
Locative inversion

- possible both with locative PPs and HTW
- impossible with adverbs

(30)  
  a. Into the house he ran!  
  b. Down the street rolled the carriage!  
  c. Out of the window jumped the cat!

(31)  
  a. There stood the man!  
  b. Here comes the Queen!  
  c. There’s an idea for you!

(32)  
  a. *Noisily he ran!  
  b. *Crazily rolled the carriage!  
  c. *Quickly she goes!
**HTW are PPs**

- HTW pattern systematically with PPs, and unlike adverbs

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HTW are PPs

- HTW are prepositions (Burton-Roberts 1991: 171)
- HTW derive from an underlying PP-like structure (Katz and Postal 1964)

\[(33)\]
here : at this place  
there : at that place  
where : at what place

- *here* and *there* are licensed in a structure with silent nouns (Kayne 2005)

\[(34)\]
THIS *here* PLACE  
THAT *there* PLACE

- Aarts (2013): HTW are PPs
- HTW correspond with a subclass of the PPs, namely those with a locative or directional meaning
HTW are PPs

- HTW are decomposable into
  - a deictic/wh part *h-/th-/wh* (henceforth ignored in this talk)
  - a locative/directional part *-ere*

- *-ere* is the phrasal spellout of an abstract set of features expressing direction/location, and an abstract noun PLACE

(35) \[ \text{DIR} \leftrightarrow \text{-ere} \]

```
  DIR
 /   \
|     |
\--LOC--\---PLACE
  LOC
```
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certain types of P only have a locative meaning, while others are directional (Déchaine et al. 1995)

(36) a. a train in\textsubscript{LOC}/to\textsubscript{DIR} Paris
    b. the roads in\textsubscript{LOC}/to\textsubscript{DIR} Paris.

(37) a. un train à\textsubscript{LOC}/vers\textsubscript{DIR} Paris
    b. les routes à\textsubscript{LOC}/vers\textsubscript{DIR} Paris.

(38) a. een trein in\textsubscript{LOC}/naar\textsubscript{DIR} Parijs
    b. de wegen in\textsubscript{LOC}/naar\textsubscript{DIR} Parijs.
Locative vs directional P (I)

- directions are more complex than/contain locations (Koopman 2000; Van Riemsdijk and Huybregts 2002; Kracht 2002; Zwarts 2005; Den Dikken 2010; Cinque 2010; Svenonius 2010; Caha 2010; Pantcheva 2011)

- the difference between locative in/à and directional to is a difference in size:

\[
\begin{array}{ccc}
\text{DIR} & \text{LOC} & \text{PLACE} \\
in & \text{Paris} \\
to & \text{Paris}
\end{array}
\]

- \( P_{\text{DIR}} = [ \text{DIR} [ \text{P}_{\text{LOC}} ]] \)
Why do purely locative Ps sometimes have an apparent motion sense?

(40)  
  a. She went/came/fell/jumped/flew \text{in}_{\text{DIR}} \text{ the water.}
  b. Ce train va \text{à}_{\text{DIR}} \text{ Paris.}

  this train goes at Paris
  ‘This train goes to Paris.’
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different verb types:

- stative verbs (e.g. *be*): LOC
- manner of motion (MOM) verbs (e.g. *dance, walk, run*)
- verbs of directed motion (DIRM) (e.g. *go, fall, jump, fly*)

(41)  

a. She is in\textsubscript{LOC} Paris.  
b. She danced in\textsubscript{LOC} the park.  
c. She went\textsubscript{DIR} in\textsubscript{DIR} the water.
verbs of directed motion are more complex than/contain manner of motion verbs

\[(42)\]

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</tr>
<tr>
<td>dance</td>
<td></td>
<td></td>
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<tr>
<td>go</td>
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</tbody>
</table>

\[V_{\text{DIR}} = [\text{DIR} [V_{\text{MOM}}]]\]
verbs of directed motion (*go, jump, fly*) can realise DIR (Fábregas 2007; Caha 2010)

this allows a purely locative preposition to appear to have a directional sense: DIR is actually spelled out by the verb

(43)

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<th>PLACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>be</td>
<td></td>
<td>in</td>
<td>in</td>
<td>Paris</td>
</tr>
<tr>
<td>dance</td>
<td></td>
<td>in</td>
<td>in</td>
<td>the room</td>
</tr>
<tr>
<td>go</td>
<td></td>
<td>in</td>
<td>in</td>
<td>the water</td>
</tr>
</tbody>
</table>
Locative vs directional V

- manner of motion verbs (dance, walk, run) are unable to spell out DIR
- *in* can only have a locative sense with these verbs

(44) a. She danced in\textsubscript{LOC} the park.
    b. She danced to\textsubscript{DIR} the park.

- neither the verb nor *in* can realise DIR.

(45)\[
\begin{array}{|c|c|c|}
\hline
& \text{DIR} & \text{LOC} & \text{PLACE} \\
\hline
dance & & \text{in} & \text{the park} \\
\hline
dance & & \text{to} & \text{the park} \\
\hline
\end{array}
\]
Locative vs directional V

- The verbs of directed motion *fall, jump, and fly* (but not *come or go*) can also occur with a locative PP

(46)  
- a. She fell in the bathroom$_{LOC}$.  
- b. The children were jumping on the trampoline$_{LOC}$.  
- c. The plane was flying at high altitude$_{LOC}$.  

- these verbs are ambiguous between a directional reading and a manner of motion reading

(47)  
<table>
<thead>
<tr>
<th>DIRECTED MOTION</th>
<th>MANNER OF MOTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>go, come</td>
<td>✓</td>
</tr>
<tr>
<td>dance, walk, run</td>
<td>✗</td>
</tr>
<tr>
<td>fall, jump, fly</td>
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Locative vs directional HTW

- English HTW can be either locative or directional
- The locative sense of HTW appears with
  - stative verbs
  - manner of motion verbs
  - directional verbs
- The directional sense of HTW becomes apparent with manner of motion verbs

(48)  
  a. The pharmacy is there$_{\text{LOC}}$.
  b. She danced$_{\text{MOM}}$ there$_{\text{LOC/DIR}}$.
  c. She came$_{\text{DIRM}}$ here$_{\text{LOC}}$ yesterday.
Locative vs directional HTW

(49) | STATE | PROC | DIR | LOC | PLACE |
--- | --- | --- | --- | --- | --- |
be | | | there |
dance | | | there |
dance | | | there |
go | | | there |

- directional HTW is more complex than/includes locative HTW
- \(HTW_{\text{DIR}} = [ \text{DIR} [ HTW_{\text{LOC}} ]]\)
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Locative vs directional V in Dutch

Dutch has the same verb classes as English:

(50)

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<tbody>
<tr>
<td>gaan, komen</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>dansen, wandelen</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>springen, vliegen</td>
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Locative vs directional V in Dutch

- Dutch has the same verb classes as English:

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- the directional/locative meaning correlates perfectly with auxiliary choice in the perfect:

<table>
<thead>
<tr>
<th>(51)</th>
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<th>HAVE</th>
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Locative vs directional V in Dutch

(52) a. Het vliegtuig is naar$_{\text{DIR}}$ Bratislava gevlogen.
   the airplane is to Bratislava flown
   ‘The plane flew to Bratislava.’

b. Het vliegtuig heeft op$_{\text{LOC}}$ grote hoogte gevlogen.
   The airplane has at great altitude flown
   ‘The plane flew at high altitude.’
Locative vs directional V in Dutch

- HAVE = BE + P (Freeze 1992; Kayne 1993; Hoekstra 1994)
- expression of possession with BE typically involves dative case:

(53)  

a. mihi est liber (Latin)  
me.DAT is book  
‘I have a book.’

b. mám knihu (Czech)  
I.have book.ACC
Locative vs directional V in Dutch

- HAVE is bigger than (contains) BE
- DAT is bigger than (contains) ACC (Caha 2009)
- size tradeoff: as the verb grows, the case shrinks (from DAT to ACC):

\[
\begin{array}{c|c|c}
\text{BE} & \text{DAT} & \text{ACC} \\
est & \text{mihi} & \\
mám & \text{kni}u &
\end{array}
\]

- HAVE = [ DAT [ BE ]]
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Locative vs directional P (II)

- earlier we saw $P_{\text{LOC}} \neq P_{\text{DIR}}$ and $V_{\text{LOC}} \neq V_{\text{DIR}}$

- $P_{\text{LOC}}$ could express direction in combination with a motion verb

- another way in which a directional reading can arise is through postpositional order, e.g. Dutch:

  (55) a. de weg in$_{\text{LOC}}$ het bos
      the road in the wood

  b. de weg het bos in$_{\text{DIR}}$
      the road the wood into
      ‘the road in(to) the wood.’
Locative vs directional P (II)

- earlier we saw $P_{\text{LOC}} \neq P_{\text{DIR}}$ and $V_{\text{LOC}} \neq V_{\text{DIR}}$
- $P_{\text{LOC}}$ could express direction in combination with a motion verb
- another way in which a directional reading can arise is through postpositional order, e.g. Dutch:

$$\text{(55) a. de weg in}_{\text{LOC}} \text{ het bos}$$
the road in the wood

$$\text{b. de weg het bos in}_{\text{DIR}}$$
the road the wood into ‘the road in(to) the wood.’

- how can *in* denote a direction, given that it is inherently locative, and there is no motion verb from which the directionality could come?
- all Dutch locative prepositions show this property
Locative vs directional P (II)

- in many languages, this LOC-DIR alternation in the meaning of prepositions correlates with a change in case marking, e.g. German:

\[(56)\]

\[\begin{align*}
\text{a. Alex tanzte \text{ in}_\text{LOC} \quad \text{dem Zimmer.}} & \quad \text{Alex danced in the.DAT room} \\
\text{\quad \text{‘Alex danced in the room.’}} & \\
\text{b. Alex tanzte \text{ in}_\text{DIR} \quad \text{das Zimmer.}} & \quad \text{Alex danced into the.ACC room} \\
\text{\quad \text{‘Alex danced into the room.’}} & 
\end{align*}\]
Movement, Direction and Location

- DAT is more complex than/contains ACC (Caha 2009)
- DATP = [ DAT [ ACC ]]
- size tradeoff: P_{LOC} has the larger case (e.g. DAT), P_{DIR} has the smaller case (e.g. ACC):

\[
\begin{array}{c|c|c}
\text{P} & \text{DAT} & \text{ACC} \\
\hline
\text{in}_{\text{LOC}} & \text{dem} & \\
\hline
\text{in}_{\text{DIR}} & \text{das} & \\
\end{array}
\]

- IN_{DIR} = [ DAT [ IN_{LOC} ]]
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(58)

\[ P_{\text{DIR}} = \begin{bmatrix} \text{DIR} & [ P_{\text{LOC}} ] \end{bmatrix} \]
\[ V_{\text{DIR}} = \begin{bmatrix} \text{DIR} & [ V_{\text{MOM}} ] \end{bmatrix} \]
\[ \text{HTW}_{\text{DIR}} = \begin{bmatrix} \text{DIR} & [ \text{HTW}_{\text{LOC}} ] \end{bmatrix} \]
\[ \text{DATP} = \begin{bmatrix} \text{DAT} & [ \text{ACC} ] \end{bmatrix} \]
\[ \text{IN}_{\text{DIR}} = \begin{bmatrix} \text{DAT} & [ \text{IN}_{\text{LOC}} ] \end{bmatrix} \]
\[ \text{HAVE} = \begin{bmatrix} \text{DAT} & [ \text{BE} ] \end{bmatrix} \]
\[\begin{align*}
(58) \quad P_{\text{DIR}} &= [ \text{DIR} [ P_{\text{LOC}} ]] \\
V_{\text{DIR}} &= [ \text{DIR} [ V_{\text{MOM}} ]] \\
HTW_{\text{DIR}} &= [ \text{DIR} [ HTW_{\text{LOC}} ]] \\
\text{DATP} &= [ \text{DAT} [ \text{ACC} ]] \\
\text{IN}_{\text{DIR}} &= [ \text{DAT} [ \text{IN}_{\text{LOC}} ]] \\
\text{HAVE} &= [ \text{DAT} [ \text{BE} ]] \\
\end{align*}\]

► DIR = DAT?
Introduction

HTW are PPs

Movement, Direction and Location

  Locative vs directional P (I)
  Locative vs directional V
  Locative vs directional HTW
  Locative vs directional V in Dutch
  Locative vs directional P (II)

Analysis

  LOC-DIR alternation in HTW
  LOC-DIR alternation in P
  BE/HAVE alternation

Conclusion
LOC-DIR alternation in HTW

- HTW show DIR-LOC alternation

(59) She danced there_{LOC/DIR}.

- HTW are the phrasal spellout of a constituent corresponding to a locative/directional PP.

(60) \[
\begin{array}{c}
\text{DIR} \\
\hline
\text{DIR} \quad \text{LOC} \\
\hline
\text{LOC} \\
\hline
\end{array}
\quad \leftrightarrow \quad -ere
\]
LOC-DIR alternation in HTW

- the HTW DIR-LOC alternation is a case of syncretism

(61) *The Superset Principle*
A lexically stored tree $\lambda$ can spell out a syntactic constituent $\sigma$ iff $\lambda$ contains $\sigma$ as a subtree.

(62) \[
\begin{array}{c}
\text{LOC} \\
/ \quad / \\
\text{LOC} \quad \text{PLACE}
\end{array}
\]

(63) \[
\begin{array}{c}
\text{DIR} \\
/ \\
\text{LOC} \\
/ \\
\text{LOC} \quad \text{PLACE}
\end{array}
\]
LOC-DIR alternation in HTW

HTW are composed of

- an ontological category PLACE (like THING, PERSON, etc.; see Baunaz and Lander 2018)
- two features (DIR and LOC) jointly contributing directionality

What are DIR and LOC?

- allative case (ALL) is composed of DAT and LOC (Caha 2017)

(64)

```
  ALL <-> -ere
     /     \
    DAT    LOC
       /     \
      LOC    PLACE
```
LOC-DIR alternation in HTW

Waris (Papuan): ALL = DAT + LOC

(65)  

<table>
<thead>
<tr>
<th></th>
<th>DAT</th>
<th>LOC</th>
<th>ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Him-ba buku ka-m vrahoi.</td>
<td>Ovla deuv-ra ka-ina dihel-v.</td>
<td>Deuv-ra-m Luk-ina-m ka-va ga-v.</td>
</tr>
<tr>
<td></td>
<td>‘He just gave me a book.’</td>
<td>‘The knife is at my house’ (lit. at the house at me).</td>
<td>‘I go to Luke’s house.’</td>
</tr>
</tbody>
</table>
LOC-DIR alternation in HTW

(66)

```
(ALL
  (DAT m)
  (LOC
    (LOC ina)
    (NP Luke)))
```
LOC-DIR alternation in HTW

(67)  \( \text{HERE}_{\text{ALL}} = [ \text{DAT} [ \text{HERE}_{\text{LOC}} ] ] \)
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<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>DAT</th>
<th>ACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>in_{LOC}</td>
<td>in_{LOC}</td>
<td>dem</td>
<td></td>
</tr>
<tr>
<td>in_{DIR}</td>
<td>in_{DIR}</td>
<td>das</td>
<td></td>
</tr>
</tbody>
</table>

- Size tradeoff: the larger case (DAT) correlates with the smaller P, the smaller case (ACC) with the larger P

- \( \text{IN}_{\text{DIR}} = [\text{DAT}[\text{IN}_{\text{LOC}}]] \)
LOC-DIR alternation in $P$

- peeling derivation: the dative location moves to become an accusative, and leaves behind a dative ‘peel’, which creates $IN_{\text{DIR}}$ (Caha 2007; 2009; 2010)

(69)  
\begin{align*}
  \text{a. } & \text{ in}_\text{LOC} \begin{bmatrix} \text{DAT} \text{DAT} \text{ACC} \text{ACC} \begin{bmatrix} \text{NOM} \text{NOM} \text{...} \end{bmatrix} \end{bmatrix} \\
  \text{b. } & \begin{bmatrix} \text{ACC} \text{ACC} \begin{bmatrix} \text{NOM} \text{NOM} \text{...} \end{bmatrix} \text{...} \end{bmatrix} \end{bmatrix} \text{ in}_\text{LOC} \begin{bmatrix} \text{DAT} \text{DAT} \end{bmatrix}_{\text{DIR}}
\end{align*}

- Dutch postpositional order (creating $P_{\text{DIR}}$ from $P_{\text{LOC}}$) likewise results from this peeling movement
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BE/HAVE alternation

- size tradeoff: as the verb grows, the case shrinks (from DAT to ACC)

(70)  

<table>
<thead>
<tr>
<th></th>
<th>BE</th>
<th>DAT</th>
<th>ACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAVE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- peeling derivation: the dative possessor moves to become a nominative, and leaves behind a dative ‘peel’, which creates HAVE

(71)  

a.  [ BE [DAT DAT [ACC ACC [NOM NOM [ ... ]]]]]

b.  [ [NOM NOM [ ... ]] ... [ BE [DAT DAT ]]HAVE ]
BE/HAVE alternation

- \( \text{HAVE} = [\text{DAT} [\text{BE}]] \)
- \( \text{V}_{\text{DIR}} = [\text{DAT} [\text{V}_{\text{PROC}}]] \)
- size tradeoff: as the auxiliary grows, the motion verb shrinks:

(72)

<table>
<thead>
<tr>
<th></th>
<th>BE</th>
<th>DAT</th>
<th>PROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>BE</td>
<td>komen, gaan</td>
<td></td>
</tr>
<tr>
<td>HAVE</td>
<td>HAVE</td>
<td>wandelen, dansen</td>
<td></td>
</tr>
</tbody>
</table>

- auxiliary selection is a function of the size of the main verb
(73) \[
\begin{align*}
P_{\text{DIR}} & = [ \text{DAT} [ P_{\text{LOC}} ] ] \\
V_{\text{DIR}} & = [ \text{DAT} [ V_{\text{MOM}} ] ] \\
HTW_{\text{DIR}} & = [ \text{DAT} [ HTW_{\text{LOC}} ] ] \\
\text{DATP} & = [ \text{DAT} [ \text{ACC} ] ] \\
\text{IN}_{\text{DIR}} & = [ \text{DAT} [ \text{IN}_{\text{LOC}} ] ] \\
\text{HAVE} & = [ \text{DAT} [ \text{BE} ] ] 
\end{align*}
\]
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Conclusion
Conclusion

- HTW correspond to PPs with a locative or directional sense
- the directional structure includes the locative one as a proper subpart
- similar inclusion relations are observed with
  - verbs of directed motion and manner of motion
  - HAVE and BE
  - DAT and ACC
  - directional and locative P
- size tradeoffs can be observed when these elements combine
References


**URL:** lingbuzz.auf.net/lingbuzz/003993


Caha, P. (2017), ‘How (not) to derive a *ABA: the case of Blansít’s generalization’, *Glossa* 2, 84.1–32.


