

Directionalized Locatives

Evidence for a small clause structure

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- When locative PPs are used with motion verbs in English they are often ambiguous between:

- Located motion
- Directed motion

- (1)
- | | | |
|----|------------------------------------------------|-------------------|
| a. | Anna ran between the pylons ... | |
| | (i) for an hour. | (Located Motion) |
| | (ii) on her way to the endzone. | (Directionalized) |
| b. | Jakub walked behind the shed ... | |
| | (i) for an hour. | (Located Motion) |
| | (ii) which hid him from our view for a moment. | (Directionalized) |
| c. | Berit swerved in front of cyclists ... | |
| | (i) for a kilometer. | (Located Motion) |
| | (ii) causing them to brake suddenly. | (Directionalized) |
| d. | Rick ran under the awning ... | |
| | (i) for his warm-up. | (Located Motion) |
| | (ii) as soon as he saw lightning. | (Directionalized) |

- The directed motion interpretation of locatives are called *directionalized locatives* (Dir-Locs)
- How can we best account for the syntactic and semantic properties of Dir-Locs

1 Outline

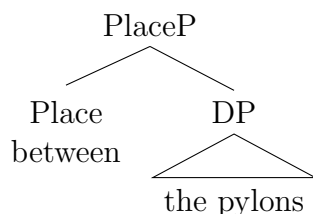
- A brief description of a previous analysis of Dir-Locs
- Problems with that analysis
- A proposal for a new analysis
- Conclusion and implications

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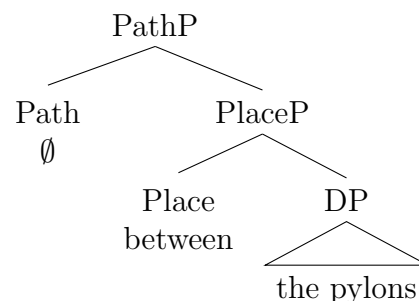
2 The Previous Analysis

- Svenonius (2010) analyses the ambiguity as an lexical ambiguity between a PlaceP (=Located Motion) and a PathP (=Directionalized Locative).
- Under this analysis, the locative prepositions inherently project PlacePs.
- Directional prepositions (*e.g.*, into, through, across) project PathPs, which embed PlacePs.
- Dir-Locs are PlacePs in a null-headed PathP.

(2) a. [PlaceP Between the pylons]



b. [PathP Between the pylons]



- This syntactic analysis is adapted from a semantic analysis of the phenomenon by Zwarts and Winter (2000) who, in turn, credit Jackendoff (1983).
- This analysis has not previously been challenged.

3 Arguments against a lexical ambiguity

- Constituency tests demonstrate that the ambiguity in question is structural.
- Dir-Locs are not interpreted the same as PathPs.
- Path heads cannot combine semantically with PlacePs and thus cannot embed them

3.1 Syntactic argument: constituency

- A simple *do-so* replacement test points to the ambiguity in question is essentially a structural one.
- Consider the interpretations of the sentences below.

- (3) **Do so insertion** → **located motion** (Cf. Lakoff and Ross 1976)
- Irene danced next to the car, and Andrew did so behind the building.
 - The soccer players ran between the nets and the sprinters did so on the track
- (4) $\llbracket X \text{ V PP1 and Y do so PP2.} \rrbracket$

$\llbracket V \text{ PP1} \rrbracket$	$\llbracket [do \ so] \text{ PP2} \rrbracket$
V PP1 _{LOC}	$[V] \text{ PP2}_{loc}$
	$*[V] \text{ PP2}_{DIR}$
	$*[V \text{ PP1}_{LOC}] \text{ PP2}_{LOC}$
	$*[V \text{ PP1}_{LOC}] \text{ PP2}_{DIR}$
V PP1 _{DIR}	$*[V] \text{ PP2}_{LOC}$
	$*[V] \text{ PP2}_{DIR}$
	$[V \text{ PP1}_{DIR}] \text{ PP2}_{loc}$
	$*[V \text{ PP1}_{DIR}] \text{ PP2}_{DIR}$

- A locative PP that combines with *do-so* is interpreted unambiguously locative.
- The constituent replaced by *do-so* is at least as large as the constituent containing the lexical verb and “directional” PPs but not as large as the constituent containing the lexical verb and the locative PP.

3.2 Semantic argument 1: *halfway*-modification

- *halfway* modifies gradable predicates and *prefers* a Path interpretation of the predicate it modifies. (Bochnak 2013)
- Consider the interpretation of unambiguous directional and locative PPs under modification by *halfway*

(5) **Directionals**

- Alma jogged halfway to the store.
“There is a path **p** that extends from some start-point and to *the store*. Alma traversed half of **p** in a jogging manner.”
- Henk drove halfway through the woods.
“There is a path **p** that extends from one edge of *the forest* to the opposite end of *the forest*. Henk traversed half of **p** in a driving manner.”

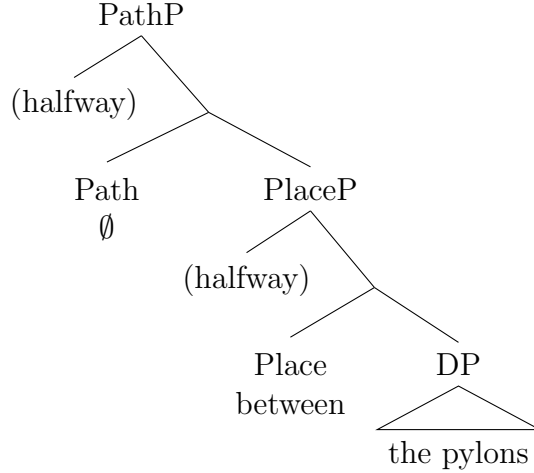
(6) **Locatives**

- The goalie stood halfway between the posts.
“The goalie stood in a spot, such that each of the posts was equidistant to her.”
- The dog was halfway inside the house.
“Half of the dog is inside the house, while the other half is not.”

- If Dir-Locs have a structure like the one in (2-b), we expect two possible structural positions for *halfway*:

- Spec-PathP, giving an interpretation like those in (5).
- Spec-PlaceP, giving an interpretation like those in (6).

- (7) a. [PathP halfway between the pylons] (predicted by Svenonius’ (2010) analysis)



- b. $\llbracket_{\text{PathP}} \text{ halfway between the pylons} \rrbracket =$
 (i) “halfway TO between the pylons” (Spec-PathP)
 (ii) “TO halfway between the pylons” (Spec-PlaceP)

- We systematically do not get the Spec-PathP interpretation with *halfway*-modified Dir-Locs.

- (8) a. Brigid ran halfway between the pylons.
 \approx “TO halfway between the pylons” (Spec-PlaceP, cf. (6-a))
 \neq “halfway TO between the pylons” (Spec-PathP)
- b. The ball rolled halfway behind the screen.
 \approx “TO halfway behind the screen” (Spec-PlaceP, cf. (6-b))
 \neq “halfway TO behind the screen” (Spec-PathP)

Summary: The PathP analysis of Dir-Locs predicts an interpretation under *halfway*-modification which we do not get. Instead we get the sometimes odd interpretation that *halfway* is modifying the PlaceP.

3.3 Semantic argument 2: compositionality

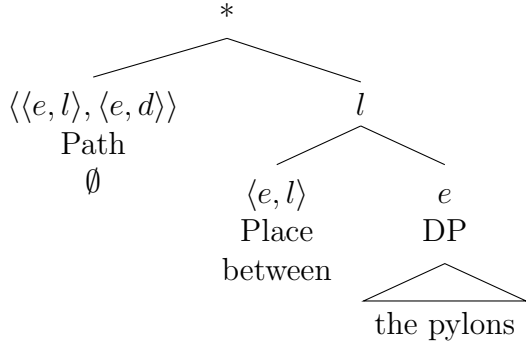
Caveat: The semantic types discussed here have been greatly simplified for ease of exposition.

- Svenonius (2010) explicitly assumes the semantic analysis of spatial PPs laid out by Zwarts and Winter (2000).
- A simplified version of the semantics has three primitive types:
 - Entities (*e*)
 - Places (*l*)

– Paths (d)

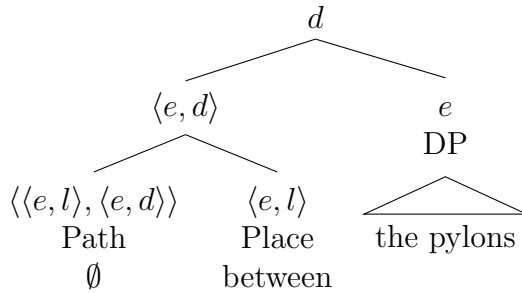
- $\llbracket \text{Place} \rrbracket \in D_{\langle e, l \rangle}$
- $\llbracket \text{Path} \rrbracket \in D_{\langle \langle e, l \rangle, \langle e, d \rangle \rangle}$
- Path heads would be expected to compose directly with Place heads before composing with DPs.
- This is not what the syntactic account predicts.

(9) Semantic type mismatch predicted by Svenonius (2010)



- Note, the structure that allows proper composition would force *halfway* to modify a PathP

(10)



Summary: The structures proposed by Svenonius (2010) would not compose semantically. If we alter the structure to allow semantic composition, we then cannot explain the facts of *halfway*-modification presented in the previous section.

3.4 Summary

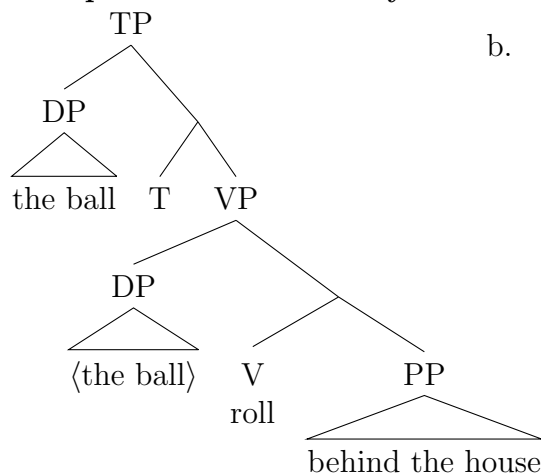
- The PathP analysis of Dir-Locs is empirically and theoretically problematic
 - Dir-Locs are not interpreted as Paths under *halfway*-modification
 - The Path analysis of Dir-Locs predicts a type mismatch in the semantics.
- *do-so* replacement test suggest that Dir-Locs attach lower than their located motion interpretation.
- Absent any evidence to the contrary, I will assume that Dir-Locs are PlacePs which merge with or below the lexical verb.

4 Dir-Locs as resultative small clauses

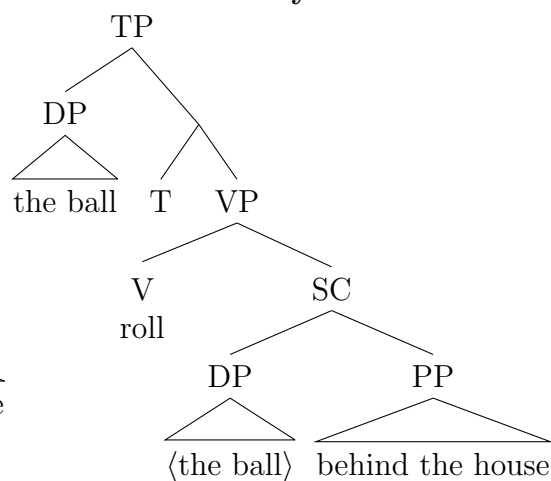
- I propose that Dir-Locs are PP resultatives (cf. Adjectival resultatives like *hammer the metal flat*, *paint the wall blue* (Kratzer 2004))
- Unlike PathPs, result phrases express a non-gradable predicates (Not modifiable by *halfway*)
- The compositionality for adjectival resultatives and spatial expressions has already been worked out.
 - Resultatives express a causal relation between events and states. (Kratzer 2004)
 - Paths are isomorphic with events. (Zwarts 2005; Ramchand 2013)
 - Events:States::Paths:Places.
- Resultatives are generally analyzed as attaching below the lexical verb.
- Two plausible structures for Dir-Locs can be adapted from literature on resultatives:
 - Complex Predicate (Irimia 2012)
 - Small Clause (Kratzer 2004)

(11) *the ball rolled behind the house*

a. **Complex Predicate analysis**



b. **Small Clause analysis**



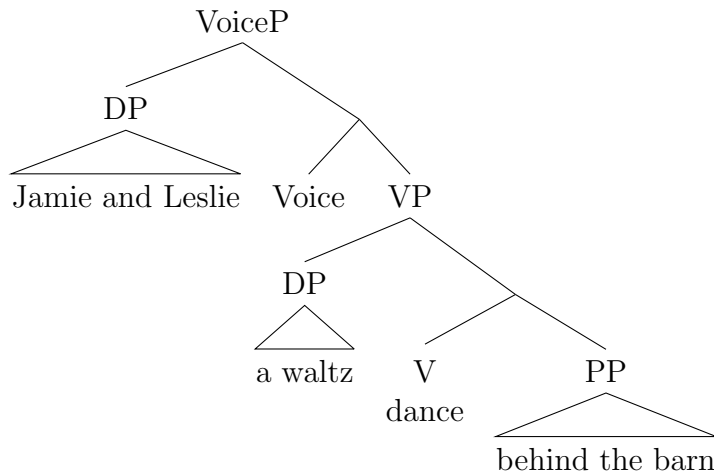
- The two make different predictions with respect to a particular ungrammatical construction: Unergatives with cognate(-like) objects and directional/resultative PPs.

(12) Jamie and Leslie danced [a waltz] [behind the barn] (*Dir-Loc).

- Given a complex predicate analysis, there is no obvious reason to rule out this construction.

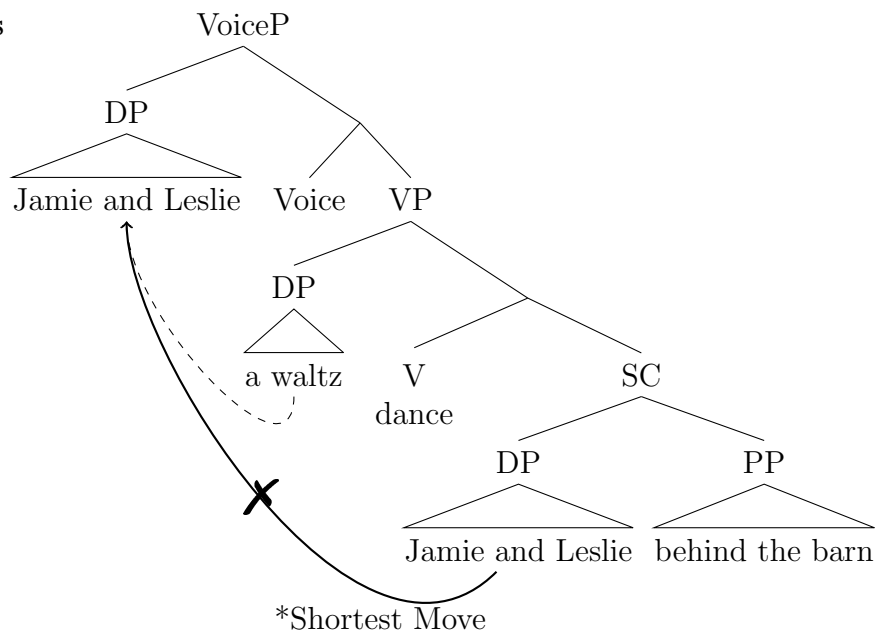
- No unlicensed arguments, no theta violations, no illicit movement

(13) **Complex Predicate Analysis**



- In the small clause analysis, the DP that denotes the entity undergoing a change of state/location merges in the small clause and raises.
- the cognate object merges with the lexical verb for theta-marking
- (12), then requires an illicit movement of from the small clause over the object to subject position.

(14) **Small clause analysis**



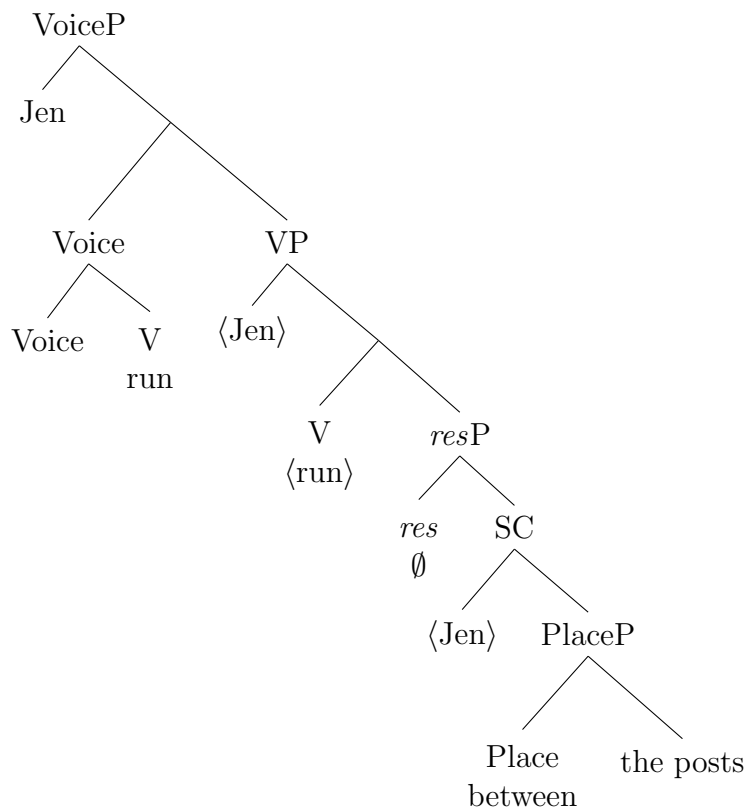
- The Small Clause analysis is preferable as the Complex Predicate analysis overgenerates.

4.1 How the small clause analysis works

Assumptions: (a) Theta roles are essentially the syntactic manifestation of neo-Davidsonian predicates, (b) they are assigned locally and (c) arguments can receive multiple of them. (Cf. Ramchand 2008)

- Consider *Jen ran between the posts*.
 - *Jen* ends up in the state of being between the posts.
 - *Jen* undergoes a running event.
 - *Jen* is the agent of a running event
- The DP *Jen* starts in the small clause and raises through the VP to Spec-Voice.

(15) The Structure of a Dir-Loc



4.2 Summary

- Resultatives are better suited than null Path heads to account for Dir-Locs
- These resultatives structures involve small clauses which can explain why they cannot co-occur with themes in unergative structures.
- The small clause structures involve raising.

5 Conclusion and implications

- The most obvious way to treat Dir-Locs is as PathPs with a null Path head.
- This analysis does not stand up to scrutiny
 - We do not get the path interpretations under *halfway* modification.
 - The structures proposed by Svenonius (2010) cannot compose properly according to the semantics he assumes.
 - A lexical ambiguity is not sufficient to account for the ambiguity under discussion. It's a structural ambiguity.
- Analysing Dir-Locs as arising from resultative small clauses accounts for the properties which are problematic for the PathP analysis.
- Furthermore, Dir-Locs and adjectival resultatives being isomorphic, puts us in a good position to explain the typological distribution of both types of constructions.
 - Germanic Languages tend to have both adjectival resultatives and directionalized locatives
 - Standard French has neither. (Rooryck 1996)
 - PEI French has Directionalized Locatives but no adjectival resultatives (Rooryck 1996)
- If these resultatives are small clause structures which require raising, restrictions on that raising could hold the explanation of the crosslinguistic variation.

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