

Problem: *only* and adjuncts

- Constituents in the syntactic scope of *only* can require access to non-predetermined material outside of the *only*P.
- Two such cases are shown on the right. The problematic material is shown in red.
- There is no way we can anticipate the amount and type of this material in the entry of *only*.

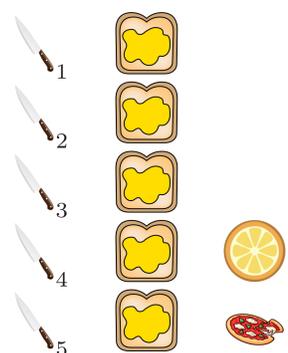
Solution: events and higher types

- Event semantics (Davidson 1967, Parsons 1990, a.o.) allows us to analyze lexically non-predetermined material.
- Higher types across the board give us access to the material outside the syntactic scope of *only*.
- We implement a uniform analysis of *only* that can handle adjuncts in event semantics based on Champollion 2015.

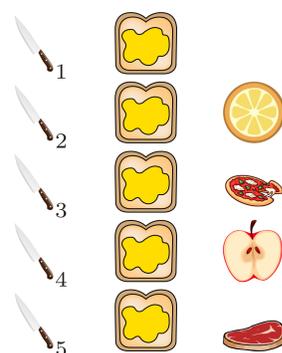
Key examples and their truth conditions

- (1) John danced [only [in the garden]_F].
True iff **John danced** in the garden, and [no events of **John dancing** occurred outside the garden].
- (2) With most knives John [only [buttered a toast]_F].
True iff ...
- Available reading ... **most knives** *x* are such that **John** buttered a toast **with** *x* and [John did nothing other than buttering a toast **with** *x*]. (true in Scenario 1, false in Scenario 2)
 - Unavailable reading ... **John** buttered a toast **with most knives** and [John did nothing other than buttering a toast **with most knives**]. (true in both Scenarios 1 and 2)

Scenario 1

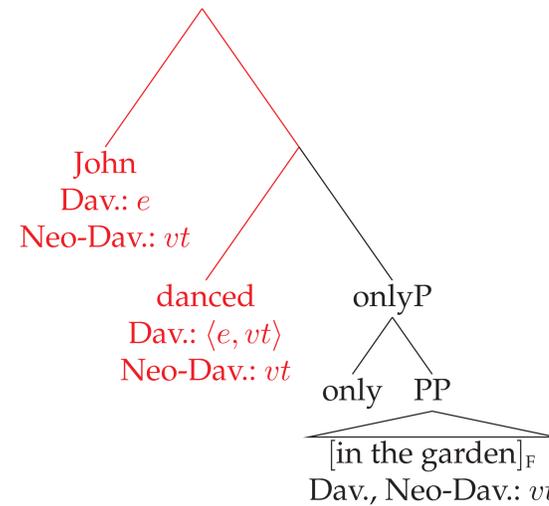


Scenario 2



Case 1: *only* applies to adjuncts

(1')

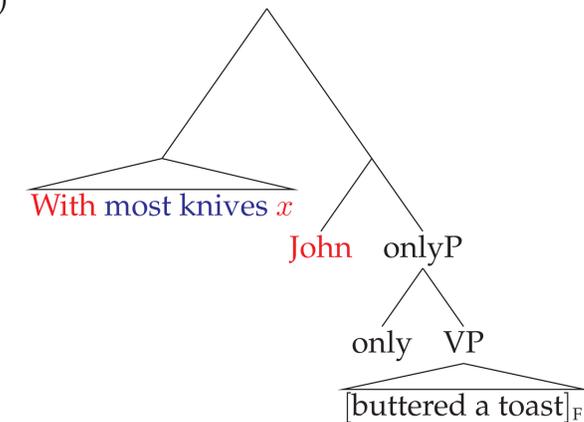


Non-starter Giving the *only*P scope over the rest of the sentence (raise or type-shift). Would work here, but not for (2').

Instead Giving the PP a higher type ($\langle V, t \rangle$, where *V* is the verb's type). As things stand, *only* works in the Davidsonian system.

Case 2: adjuncts bind into the scope of *only*

(2')



Non-starter Giving the *only*P scope over the rest of the sentence would yield the wrong truth conditions (shown in (2b)), since we want the material in blue to bind into the scope of *only*.

Instead Giving the VP a higher type, but what type would that be?

Our analysis: higher types both for adjuncts and VPs

Generalization We want to introduce **non-predetermined material** into the scope of *only*. Standard event semantics doesn't allow that. Analyses of *only* that rely on standard event semantics (Bonomi & Casalegno 1993; Beaver & Clark 2008, a.o.) can't handle (1) and (2).

Proposal Raise all types uniformly, as in continuized event semantics from Champollion 2015.

Gist of Champollion 2015

- Verbs and their projections denote existential quantifiers over events ($\langle vt, t \rangle$):

$$(3) \llbracket \text{danced} \rrbracket = \lambda f_{vt}. \exists e [f(e) \wedge \text{dance}(e)]$$

- Modifiers (arguments that have combined with their θ -roles and adjuncts) are uniformly of type $\langle \langle vt, t \rangle, \langle vt, t \rangle \rangle$:

$$(4) \begin{aligned} \text{a. } \llbracket \text{John}_{ag} \rrbracket &= \lambda V_{\langle vt, t \rangle} \lambda f_{vt}. V(\lambda e. f(e) \wedge \text{ag}(e) = j) \\ \text{b. } \llbracket \text{in the garden} \rrbracket &= \lambda V_{\langle vt, t \rangle} \lambda f_{vt}. V(\lambda e. f(e) \wedge \text{loc}(e) = ix.\text{garden}(x)) \\ \text{c. } \llbracket \text{with most knives} \rrbracket &= \lambda V_{\langle vt, t \rangle} \lambda f_{vt}. \text{most}(\text{knife})(\lambda x. V(\lambda e. f(e) \wedge \text{instr}(e) = x)) \end{aligned}$$

- A sentence-level closure, $\llbracket [\text{cl}] \rrbracket$, contributes a trivial continuation, $\lambda e. \text{true}$:

$$(5) \llbracket \text{John danced in the garden} \rrbracket = \llbracket \text{John}_{ag} \rrbracket(\llbracket \text{in the garden} \rrbracket(\llbracket \text{danced} \rrbracket))(\llbracket [\text{cl}] \rrbracket) = \exists e [\text{dance}(e) \wedge \text{ag}(e) = j \wedge \text{loc}(e) = ix.\text{garden}(x) \wedge \text{true}]$$

Our implementation of *only* in Champollion's system

- Only* takes a continuized constituent α and (i) checks the presupposition (underlined) that the ordinary semantic value of α holds of its continuation X , and (ii) asserts that all (relevant) alternatives Y to α are false of X :

$$(6) \llbracket \text{only } \alpha \rrbracket = \lambda X. \llbracket \alpha \rrbracket^O(X) \wedge \forall Y [Y \in \llbracket \alpha \rrbracket^A \rightarrow \neg Y(X)] \quad \llbracket \alpha \rrbracket^O = \text{ordinary semantic value of } \alpha, \llbracket \alpha \rrbracket^A = \text{set of alternatives to } \alpha \text{ (Rooth 1992)}$$

$$(7) \llbracket \text{John danced [only in the garden]}_F \rrbracket = \underline{\exists e [\text{dance}(e) \wedge \text{ag}(e) = j \wedge \text{loc}(e) = ix.\text{garden}(x)]} \wedge \forall M' [M' \in \llbracket \text{in the garden} \rrbracket^A \rightarrow \neg M'(\lambda f_{vt}. \exists e [\text{dance}(e)])(\lambda e. \text{ag}(e) = j)]$$

$$(8) \llbracket \text{With most knives John only [buttered a toast]}_F \rrbracket = \text{most}(\text{knife})(\lambda x. \underline{\exists e [\text{butter}(e) \wedge \text{ag}(e) = j \wedge \text{toast}(\text{th}(e)) \wedge \text{instr}(e) = x]}} \wedge \forall V' [V' \in \llbracket \text{buttered a toast} \rrbracket^A \rightarrow \neg V'(\lambda e. \text{ag}(e) = j \wedge \text{instr}(e) = x)])$$

Selected references

Beaver & Clark 2008. Sense and sensitivity: how Focus determines meaning. OUP. Bonomi & Casalegno 1993. Only: association with Focus in event semantics. NLS 2(1). Champollion 2015. The interaction of compositional semantics and event semantics. L&P 38(1). Davidson 1967. The logical form of action sentences. Parsons 1990. Events in the semantics of English. MIT Press. Rooth 1992. A theory of Focus interpretation. NLS 1(1).