Focus on adjuncts: a uniform event-based semantics for *only*

Maria Esipova (masha.esipova@nyu.edu) and Lucas Champollion (champollion@nyu.edu)
New York University

Problem: *only* and adjuncts

- Constituents in the syntactic scope of *only* can require access to non-predetermined material outside of the onlyP.
- 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 ...

a. *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)

b. *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

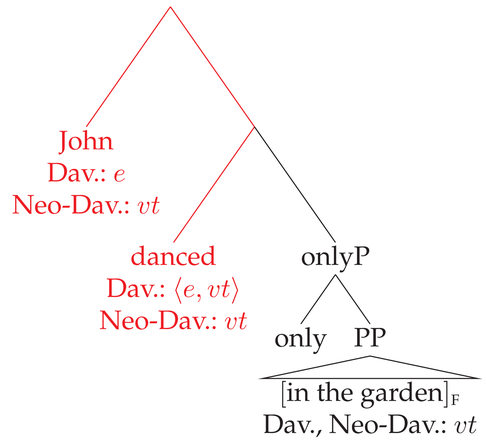
Scenario 2

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).

Case 1: *only* applies to adjuncts

(1′)

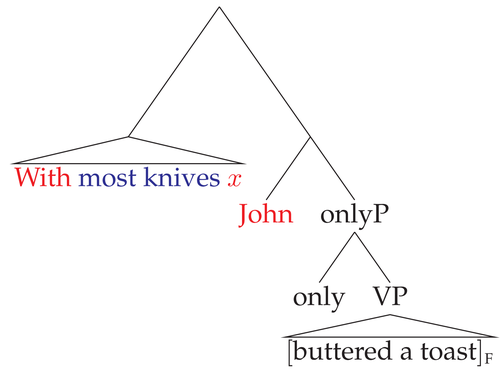


Non-starter Giving the onlyP scope over the rest of the sentence (raise or type-shift). Would work here, but not for (2′).

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 onlyP 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) $[\![\text{danced}]\!] = \lambda f_{vt}.\exists e[f(e) \wedge \mathsf{dance}(e)]$

- 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) a. $[\![\text{John}_{ag}]\!] = \lambda V_{\langle vt,t\rangle}\lambda f_{vt}.V(\lambda e.f(e) \wedge \mathsf{ag}(e) = \mathsf{j})$
b. $[\![\text{in the garden}]\!] = \lambda V_{\langle vt,t\rangle}\lambda f_{vt}.V(\lambda e.f(e) \wedge \mathsf{loc}(e) = \iota x.\mathsf{garden}(x))$
c. $[\![\text{with most knives}]\!] = \lambda V_{\langle vt,t\rangle}\lambda f_{vt}.\mathsf{most}(\mathsf{knife})(\lambda x.V(\lambda e.f(e) \wedge \mathsf{instr}(e) = x))$

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

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

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

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

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