

Plurals and events (chap. 4) : Essential Separation

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Structure of the argument

Schein attempts to show that the truth-condition of sentences like (1)a are unavailable if we assume that “*teach*” denotes a 4-ary predicate (3 arguments of the verb + event)¹

- (1) a. Three video games taught every quarterback exactly two new plays.
- b. **Observed truth-conditions:**
 Every quarterback learned two new plays
 They received instruction from three video-games.
- c. “*teach*” denotes an *eeevt* predicate

An argument of impossibility is tricky to make: one needs to make sure that the reading is impossible to obtain under any auxiliary assumptions. In particular, Schein explores two classes of auxiliary assumptions:

- 1. **Composition:** how quantifiers compose with one another.
- 2. **Denotation of $\llbracket \text{teach} \rrbracket$:** what 4-way relation “*teach*” denotes.

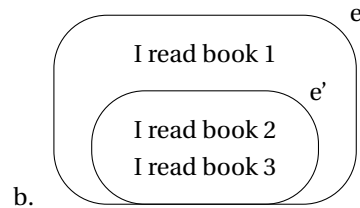
1 Preliminary confusions

Before spelling out these assumptions, Schein seems to worry about a “*van Benthem problem*” that obtains with modified numerals and events. The effect of *exactly* may be nullified by focusing on specific sub-events. (2) is a simplified version of the problem. For instance, in e' , it is true that I read exactly two books while overall, I in fact read 3 books.

¹ Schein uses *indirect* semantics, where a sentence first gets translated into a formula of some logical language, which itself receives a model-theoretic representation. I rephrase in terms of the more familiar *direct* semantics of Heim and Kratzer, where sentences immediately translates to model-theoretic objects.

(2)a is a simpler instance of the problem that worries Schein ; in a characteristic manner, Schein chooses to illustrate the problem with the complicated sentence in (1a)

(2) a. I read exactly two books.



Schein seems to consider the “*van Benthem*” reading to be available. He wants a way to force readers to interpret the sentence within the big event *e*. He considers three ways to achieve this:

- (3) a. I read exactly two books in exactly 24 hours. (adverbial modifier)
 b. I read exactly two books with the same title. (enriching descriptive content)

If *e'* takes less than 24 hours and *e* exactly 24 hours, then (3)a can't possibly be talking about *e'*.

But Schein decides against these two ways of doing things

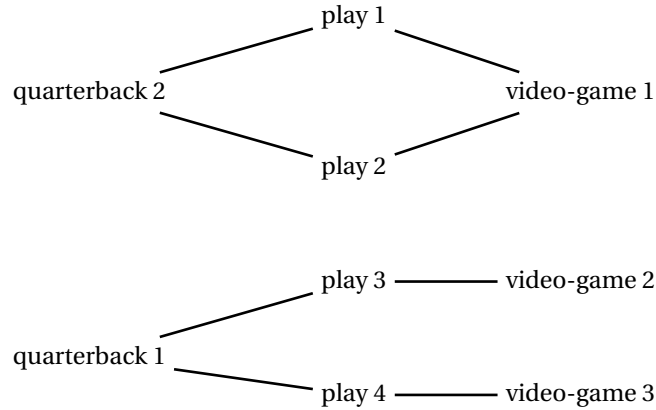
- Temporal adverbials because “*[they], one is prepared to concede, involve [quantification over] events in some crucial way*”
- *same* because “*[they] hold mysteries of their own*”

He prefers the following route which does the same thing that *same* does with only material “*within the fragment that we are holding polyadic logical form responsible to*”.

2 Composition: quantifiers & scope

The truth conditions for (1a) that we aim for should be true in the following scenario:

(4)



First off, the truth-conditions seem to imply that *exactly two new plays* is in the scope of *every*, since there are indeed two new plays per quarterback. That establishes on scope relation at least for our quantifier:

every quarterback \gg two new plays

Since there are two new plays *per* quarterbacks, this imply, within Schein's view, that *every* quantifies over singularities. The truth-conditions that the composition must give us will look as follows (unknowns in red, upper case variables range over pluralities, exactly 2 is left unanalysed):

(5) (three video games?) ... $\forall y \in \llbracket \text{quarterback} \rrbracket, \text{Exactly } 2 \ X \in \llbracket \text{plays} \rrbracket, \llbracket \text{give} \rrbracket (?) (y) (?) (e)$

The real puzzle is *three video-games*. How is it interpreted (distributive, undistributed, etc.)? What is its scope? On top of that, we may choose

Option I: plural interpretation We could interpret it as a regular plural existential