

On homework 5

(Handout June 18, questions 1 and 2)

QUESTION 1: Is the predicate P + IMPERF below divisible, as Deo intended?

- (13) (...) Maya dance-IMPERF jazz
 $\lambda t. \exists t' [t \subset_{\text{nf}} t' \wedge \exists e [\tau(e) \subseteq t' \wedge \text{DANCE}(e) \wedge \text{AG}(e)=m \wedge \text{THEME}(e)=\text{jazz}]]$

SOLUTION TO QUESTION 1: The definition of divisibility is repeated below:

- [1] A predicate P is DIVISIBLE iff, if it is true of an event / time, it is also true of any part of that event / time.

The question is hence the following: for any time interval t with the property (13), will any subinterval of t necessarily have property (13) as well?

The answer is 'yes'. Consider a random time interval t1 with the property (13). We have that:

- [2] $\exists t' [t1 \subset_{\text{nf}} t' \wedge \exists e [\tau(e) \subseteq t' \wedge \text{DANCE}(e) \wedge \text{AG}(e)=m \wedge \text{THEME}(e)=\text{jazz}]]$.

That is, we have that there is a (non-final) proper superinterval of t1, namely t', which includes the run-time of a dancing event of the relevant type. But then, for any subinterval t2 of t1, we can also find a proper superinterval, namely t' again, which includes the run-time of a dancing event of the relevant type. That is, for any t2 part of t1, we have:

- [3] $\exists t' [t2 \subset_{\text{nf}} t' \wedge \exists e [\tau(e) \subseteq t' \wedge \text{DANCE}(e) \wedge \text{AG}(e)=m \wedge \text{THEME}(e)=\text{jazz}]]$.

This means that, if t1 has property (13), then any t2 part of t1 will have property (13) as well. Therefore, the predicate corresponding to (13) is divisible.

QUESTION 2: Does the formula in (14) derive the desired durative interpretation? If not, how could we fix it? Consider that IMPERF (12) is in competition with PERF(ective) (15).

- (14) Between 2003 and 2008, Maya danced-IMPERF jazz.
 $\exists t' [\langle 10h...11h \rangle \subset_{\text{nf}} t' \wedge \exists e [\tau(e) \subseteq t' \wedge \text{DANCE}(e) \wedge \text{AG}(e)=m \wedge \text{THEME}(e)=\text{jazz}]]$
 \Rightarrow durative???

- (15) PERF = $\lambda P_{\langle s,t \rangle}. \lambda t. \exists t' [t \supseteq t' \wedge \text{INST}(P, t')]$

REFORMULATING QUESTION 2, FOR YOU TO REPEAT FOR A BETTER GRADE: In languages that overtly mark the imperfective, a sentence with shape [4] is interpreted habitually and assigns a durative meaning to the adverbial *between t1 and t2*; that is, [4] says that the habit of Maya dancing jazz lasted at least from 2003 till 2008, perhaps more than that but certainly not less.

- [4] Between 2003 and 2008, Maya danced-IMPERF jazz.

The question is whether the formula that Deo gives us derives the correct, durative interpretation for the adverbial. Deo's formula for [4] is this:

- [5] $\exists t' [\langle 2003...2008 \rangle \subset_{\text{nf}} t' \wedge \exists e [\tau(e) \subseteq t' \wedge \text{DANCE}(e) \wedge \text{AG}(e)=m \wedge \text{THEME}(e)=\text{jazz}]]$

Does [5] guarantee that Maya's dancing jazz habit spread at least as long as from 2003 to 2008? Why? / Why not? If [5] does not guarantee this result, consider that IMPERF-marking (see [6]) is in competition with PERF(ective)-marking (see [7]). Can [5] together with some "blocking" mechanism in the grammar guarantee the durative interpretation of the adverbial in [4]? If so, explain how.

$$[6] \quad \text{IMPERF} \quad = \quad \lambda P_{\langle s, t \rangle} . \lambda t . \exists t' [t \subset_{\text{nf}} t' \wedge \text{INST}(P, t')]$$

$$[7] \quad \text{PERF} \quad = \quad \lambda P_{\langle s, t \rangle} . \lambda t . \exists t' [t \supseteq t' \wedge \text{INST}(P, t')]$$