

The puzzle of *quasi prima* and *quasi dopo*

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The Phenomenon. This paper analyzes a puzzling asymmetry between the Italian temporal connectives (t-conns) *prima* ‘before’ and *dopo* ‘after’, which is observed when they are modified by the approximative adverb *quasi* ‘almost’. While *quasi prima* in (1a) is interpreted as ‘shortly after’, *quasi dopo* in (1b) is uninterpretable, producing an unacceptable sentence.

- (1) a. L’avventura è terminata quasi prima che iniziasse.
‘The adventure ended almost before it started.’
b. ?L’avventura è iniziata quasi dopo che è finita.
‘?The adventure started almost after it ended.’

Our solution to this puzzle relies on: (a) an analysis of *quasi* as a scale-sensitive particle, and (b) an asymmetric analysis of *prima* and *dopo* in which the former has the meaning of the temporal comparative *più presto* ‘earlier’ while the latter denotes a binary relation of temporal succession between events. On our proposal, *quasi* modifies the comparative morpheme ‘more’ underlying *prima* and quantifies over lower ranked alternatives to the semantic value of ‘more’, yielding a reversal of the relation of temporal precedence in (1a). On the other hand, *dopo* does not provide any element from a scale which *quasi* could modify, hence the unacceptability of (1b).

Scalarity of *quasi*. We argue that the semantics of *quasi* necessarily makes reference to a scale on the basis of the contrast between (2a) and (2b):

- (2) a. Leo è arrivato quasi alle 3. ‘Leo arrived almost at 3 pm.’
b. Leo è arrivato all’incirca alle 3. ‘Leo arrived around 3 pm.’

Whereas (2b) implies that Leo’s arrival occurs at some point within a time interval that has 3pm as its center, (2a) implies that Leo arrived *before* 3pm, i.e. the temporal adverbial *alle 3* denotes a value on a scale consisting of times linearly ordered from earlier to later and *quasi* is sensitive to this scale (cf. Amaral [2007]). We propose a focus-based analysis of *quasi* (along the lines of Rooth’s [1985] account of *only*): the adverb modifies a sentence containing a focused constituent and the focused constituent provides a set of scalar alternatives to its semantic value. The meaning of a sentence *quasi(S)* is analyzed as encompassing the following two entailments, here exemplified for (2a) (we refer to them as *polar* component and *proximal* component, after Sevi [1998] and Horn [2002]):

(i) negation of the modified sentence (*polar component*):

(3) Quasi(Leo è arrivato [_F alle 3]) entails \neg (Leo è arrivato [_F alle 3])

(ii) existential quantification over alternatives that are lower ranked with respect to the semantic value of the focused constituent (the limit point), and are situated closely to it, in a contextually relevant sense of ‘closeness’ (*proximal component*):

(4) Quasi(Leo è arrivato [_F alle 3]) entails $\exists t (t < 3\text{pm} \ \& \ \text{close}(t, 3\text{pm}))$ (Leo è arrivato a *t*)

Analysis. Following Del Prete (2008), we analyse *prima* as the temporal comparative *più presto* ‘lit. more early’, and assume that *quasi* modifies the comparative marker *più* ‘more’, thus activating a set of scalar alternatives to its semantic value and selecting for a lower ranked alternative from the scale. We assume that the relevant scale includes the following sub-scale: **more > as much as > a bit less** (see (5) through (7)). In (1a), the polar component is the entailment that the adventure started at least as early as it ended (see (8a) below). If the selected

alternative to *more* were *as much as*, (1a) would entail that the adventure ended at the same time as it started. This entailment is discarded on the basis of general knowledge about the temporal ordering of startings and endings, and the proximal component is instantiated through *a bit less* (see (8b) below). Hence, the “temporal reversal” effect observed in (1a) is explained by the fact that the alternative *a bit less* corresponds to a time located shortly *after*, not before, the time at which the adventure started.

[**d** is the type of degrees, **t** the type of truth-values, **E** the type of events, τ the temporal trace function, γ the culmination point function, degrees of earliness are elements of the set of times T, d is a degree of earliness at least as great as d' if and only if $d \leq_T d'$]

$$(5) \quad [[\text{more}]] = \lambda P_{\langle d, t \rangle}. \lambda Q_{\langle d, t \rangle}. \exists d [\neg P(d) \wedge Q(d)]$$

$$(6) \quad [[\text{a bit less}]] = \lambda P_{\langle d, t \rangle}. \lambda Q_{\langle d, t \rangle}. \exists d [P(d) \wedge \neg Q(d) \wedge \exists d' [d \geq d' \wedge \text{close}(d, d') \wedge Q(d')]]$$

$$(7) \quad [[\text{presto}]] = \lambda d_d. \lambda e_E. \tau(\gamma(e)) \leq_T d$$

$$(8) \quad [[\text{The adventure ended almost before it started}]] = 1 \quad \text{iff}$$

$$(8a) \quad \neg \exists d [\neg \exists e [\text{started}(\text{the-adventure}, e) \wedge \tau(\gamma(e)) \leq_T d] \wedge \exists e [\text{ended}(\text{the-adventure}, e) \wedge \tau(\gamma(e)) \leq_T d]]$$

(polar component)

[the adventure did not end before it started]

$$(8b) \quad \exists d [\exists e [\text{started}(\text{the-adventure}, e) \wedge \tau(\gamma(e)) \leq_T d] \wedge \neg \exists e [\text{ended}(\text{the-adventure}, e) \wedge \tau(\gamma(e)) \leq_T d] \wedge \exists d' [d \leq_T d' \wedge \text{close}(d, d') \wedge \exists e [\text{ended}(\text{the-adventure}, e) \wedge \tau(\gamma(e)) \leq_T d']]]$$

(proximal component)

[the adventure ended shortly after it started]

On the other hand, (1b) is bad because the modified *dopo*-sentence does not contain any scalar element that *dopo* could modify. Contrary to natural expectations about *prima* and *dopo* being mirror-images of one another, we follow Del Prete (2008) in assuming that *dopo* is not a temporal comparative, hence it does not encompass the comparative morpheme *più*. The lexical entry we assume for *dopo* specifies its meaning as a binary relation of temporal succession between events:

$$(9) \quad [[\text{dopo}]] = \lambda e_2. \lambda e_1. \tau(e_1) > \tau(e_2)$$

Our claim is that the meaning given in (9) is not part of any natural scale of binary relations over events, hence *dopo* cannot be modified by *quasi*.

Conclusions. This paper addresses the interaction between *quasi* and the meaning of temporal connectives by analyzing the asymmetry between the interpretation of *quasi prima* ‘almost before’ and *quasi dopo* ‘almost after’. Our analysis sheds light on the sensitivity of *quasi* to scale structure and in particular on the interaction of *quasi* with the semantics of comparatives. Furthermore, this paper provides further evidence for a separate semantic analysis of the t-conns *prima* and *dopo*.

References. Amaral, P. 2007. *The meaning of approximative adverbs: Evidence from European Portuguese*. Ph.D. Dissertation, OSU. Del Prete, F. 2008. A non-uniform semantic analysis of the Italian temporal connectives *prima* and *dopo*. *Natural Language Semantics* 16:157–203. Horn, L. 2002. Assertoric inertia and NPI licensing. *CLS 38-2: The Panels*, 55-82. Rooth, M. 1985. *Association with Focus*. Ph.D. Dissertation, UMass Amherst. Sevi, A. 1998. *A semantics for almost and barely*. M.A. thesis, Tel-Aviv University.