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Temporal modifiers and attitude reports:
Novel evidence for Keshet's IPG

Overview: This talk investigates the temporal interpretation of attitude reports (AttR) modified by temporal adverbs (TA) in Romance languages, with a focus on the restrictions imposed on tense-adverb combinations in Italian. Consider the contrast below:

- (1) Dopodomani Luca dirà che Sara è **partita** *{domani} / {il giorno prima}.
(‘The day after tomorrow Luca will say that Sara left tomorrow/{the day before}.’)
(2) Ieri Luca ha detto che Sara **partirà** {domani} / *{dopo due giorni}.
(‘Yesterday Luca said that Sara will leave tomorrow/{after two days}.’)

Assuming that Sara's departure occurs tomorrow, an embedded past tense can only be modified by an anaphoric adverbial (e.g., (1)), while an embedded future only allows a deictic adverbial (e.g., (2)). Building on Keshet (2010), we argue that combinatorial options between AttRs and TAs are driven by an economy principle according to which deictic and anaphoric TAs can only occur with tense forms evaluated with respect to the utterance time (UT) and the local evaluation time (EvalT), respectively.

Background: Despite receiving little attention in the semantics literature, one prominent syntactic proposal traces back to Giorgi (2010). Giorgi's analysis hinges on the following tenets: (a) non-imperfective Indicative forms all yield double access readings (DAR) and are, therefore, relativized to both UT and the local EvalT (in AttR the attitude time (AT)); (b) deictic/anaphoric TAs require that the local EvalT be equal/not equal to UT. While this analysis correctly accounts for the availability of deictic TAs in most future/past-tensed embeddings, it leaves several puzzles unexplained: (i) it cannot elucidate why anaphoric adverbials can occur with the analytic perfect (*Passato Prossimo*) but not with the simple future; (ii) it involves stipulations regarding indicative forms treated as non-DAR; (iii) it struggles to convincingly explain why the deictic adverbial *tomorrow* cannot occur in past-under-future reports.

Proposal: Contrary to Giorgi (2010) and in agreement with Ogihara & Sharvit (2012), we contend that the only forms involving a *de Re* construal are the present tense and the future, with the former being deictic and the latter historically derived from the present. By contrast, the past tense may exhibit both a *de Re* and a *de Dicto* construal, contingent on the context. Furthermore, we take both tenses (see (3)) and TAs (see (4)) to denote predicates of times that necessitate a reference time (RT) and an evaluation time (EvalT). While EvalT is locally bound, RT is existentially closed (cf. Grønn & Von Stechow 2016, p. 361) - setting aside, for the sake of clarity in exposition, the contribution of viewpoint aspect. We also argue that TAs adjoin to T, thus resulting in an intersective interpretation that restricts the reference time provided by the tense. Additionally, in alignment with Giorgi's proposal, we also posit that deictic adverbials such as *domani* require that the EvalT be a time overlapping with UT, as illustrated in (4-a). In contrast, anaphoric adverbials such as *dopo due giorni* exclude UT as the EvalT, as given in (4-b).

- (3) $\llbracket \text{PAST} \rrbracket = \lambda t_i. \lambda p_{\langle i,t \rangle}. \lambda t'_i. t' < t \ \& \ p(t')=1$; $\llbracket \text{PRES} \rrbracket = \lambda t_i: t \circ t^*. \lambda p_{\langle i,t \rangle}. \lambda t'_i. t' \circ t \ \& \ p(t')=1$
 $\llbracket \text{FUT} \rrbracket = \lambda t_i: t \circ t^*. \lambda p_{\langle i,t \rangle}. \lambda t'_i. t' > t \ \& \ p(t') = 1$

- (4) a. $\llbracket \text{domani} \rrbracket = \lambda t_i: t \circ t^*. \lambda p_{\langle i,t \rangle}. \lambda t'_i. t' - t = 1 \text{ day} \ \& \ p(t')$
b. $\llbracket \text{dopo} \rrbracket (\llbracket \text{due giorni} \rrbracket) = [\lambda m_i. \lambda t_i: \neg(t \circ t^*). \lambda p_{\langle i,t \rangle}. \lambda t'_i. t' - t = m \ \& \ p(t')](2 \text{ days})$

- (5) LF: $[_{CP} t^* [\dots \lambda t_2 [\exists [_{TP} [_{T} [\text{PAST/PRES } t_2/t_0]] [_{PP} \text{Adv } t_2/t_0]]] [_{VP} p]]]]] \quad (t^* \circ \text{UT})$

Against this backdrop, we propose that the ultimate determinant of the observed patterns lies in the impossibility for tenses and TAs to receive conflicting temporal evaluations, as dictated by Keshet (2010, p. 3)'s Intersective Predicate Generalization illustrated in (6).

- (6) **Intersective Predicate Generalization (IPG):**

Two predicates interpreted intersectively may not be evaluated at different times or worlds from one another.

A crucial implication of IPG is that, in ATTRs, embedded deictic and anaphoric adverbials "impose" a *de Re* and *de Dicto* interpretation, respectively, on the tense they modify. It follows that deictic tense forms, like present and future, only align with deictic adverbials, while temporally dependent forms strictly pair with anaphoric adverbials. In (1), the resulting LF involves an embedded past with a *de Dicto* interpretation relative to the future AT (Luca's speech time). Combining the past tense with a deictic adverbial

