Compositional paths to temporal *de Se*

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Overview: This talk addresses the Sequence of Tense (SoT) puzzle in Italian and Spanish. We discuss novel data from future contexts and X-marked conditionals that challenge the common view whereby temporal *de Se* readings in Italo-Western Romance (IWR) are tied to tense agreement. Thus, we offer an alternative account hinging on λ-binding as well as on the modal properties of the Romance imperfect.

SoT in Romance and open puzzles: Commonly considered SoT languages, Italian and Spanish express (past) simultaneous readings (*SIM*) by embedding a(n imperfective) past tense under an agreeing past tense form (see (2), for Spanish).

(1)   Context: Mary (earlier at the museum): *'I'm hungry!'*

(2)   En el   museo María dijo   que **tenía**   hambre.
        in DET museum Mary say.PAST COMP **have.PAST.IPFV** hunger.
        'At the museum Mary said that she was hungry.'   (*SIM*)

The simultaneous reading in (2) involves temporal self-location and traditionally results from the semantic deletion of the bold-faced past, whose tense features are licensed by the c-commanding higher past tense (cf. Grønn & Von Stechow 2010; Ogihara & Sharvit 2012). This account is motivated on the basis of purely *de Se* construals for the embedded past in (i) reports of permanent states of affairs ((3), cf. Khomitsevich 2008) as well as in (ii) future contexts ((5), cf. Abusch 1988), where past does not appear to convey "pastness". Despite being a key diagnostics of temporal *de Se*, these tests have largely been overlooked when it comes to Romance (but see Rodríguez (2008) for Spanish and Ferreira (2017) for Portuguese).

(3)   (i) Monica credeva$_{PAST}$ che 9 **fosse**$_{PAST}$ un numero primo!   [*Italian*]
        'Monica believed that 9 was a prime number.'

(4)   (ii) Context (yesterday): *John is organizing a camping trip with Mary for next weekend. He is worried that Mary hasn't packed enough food and will get hungry during the trip.*

(5)   % Ayer, Juan apostó$_{PAST}$ que durante el campamento María diría$_{FUT,PAST}$ que **tenía**$_{PAST}$ hambre.   [*Spanish*]
        'Yesterday John bet that during the camping Mary would say that she was hungry.'(*SIM*)

Empirically, a clear asymmetry emerges: while imperfect-under-past is universally accepted for (i), (ii) shows inter-speaker variation. In the interest of space, we present data from one language, but the results are consistent for both Spanish and Italian with respect to (i) and (ii). The observed contrast remains unexplained under traditional SoT accounts, as both (i) and (ii) in IWR-languages, similar to English, involve a continuous sequence of past tense morphology. A second puzzle pertains to *SIM*-readings of imperfect-marked complement clauses of X-marked conditionals, as given in (6). Although both present ((6-a)) and past ((7-a)) X-marked conditionals display SoT configurations, *SIM*-readings are consistently rejected only for the former.

(6)   Context: *We may postpone the party, as many will be out of town next week.*

   a.   #Se la festa si tenesse la settimana prossima, tutti direbbero$_{PAST}$ che **era**$_{PAST}$ un disastro.   (*pres X-mark*)
        'If the party was taking place now, everybody would say that it was a disaster.'

(7)   Context: *Fortunately, the party was last week, as many will be out of town next week.*

   a.   Se la festa si fosse tenuta la prossima settimana, tutti avrebbero detto$_{PAST}$ che **era**$_{PAST}$ un disastro.   (*past X-mark*)
        'If the p. had taken place next week, everybody would have said it was a disaster.'

An agreement-based theory fails to explain the lack of *SIM* in present X-marked conditionals.

Proposal: We propose that the availability of *SIM* readings and temporal *de Se* in IWR SoT

constructions must be attributed to two distinct mechanisms, neither of which involves the deletion of the embedded imperfect's past features. Specifically, we suggest that, at TP-level, the imperfect projects a deictic pronominal tense that picks up a contextually salient time whose value is presuppositionally restricted to times preceding the utterance time t_c (cf. Heim 1994). In attitude reports, this variable is bound by default by the attitude verb, unless the context provides an external referent. Crucially, the imperfect's presupposition is always satisfied if the attitude verb is past-oriented. An example with simplified computations (ignoring grammatical aspect) is given below.

(8) $[\![\text{imp}_{2,c}]\!] = g(2)$: $g(2) < t_c$

(9)   LF of (2): $[_{TP}$ PAST ... $[_{VP}$ María decir- $[_{CP} \lambda t_2 [_{TP} \text{imp}_{2,c} ... [_{VP}$ tener hambre $]]]]]]$

(10) $[\![(9)]\!]$ defined iff $\forall t'$ compatible with what Mary said at the museum, $t' < t_c$
        If def., $[\![(9)]\!] = 1$ iff $\exists t[t < t_c \ \& \ \forall \langle w',t' \rangle \in Say(\text{Marie},w@,t) \to$ M is hungry at t' in $w']$

In (10), the predicate 'being hungry' holds true of the time t' compatible with what Marie said at the museum, thus generating a simultaneous reading.

For the reasons above, this analysis cannot be extended to the null readings in (5) and (3). Building on Ippolito (2004), we propose that the imperfect in these sentences retains its past meaning, in that it refers to some source of evidence available to the speaker at some past time (here, the attitude time). Formally, the pronominal variable in (8) restricts the accessibility relation of a covert epistemic modal (see (11-a)), with the embedded proposition evaluated relative to worlds compatible with what the speaker knows at the attitude time. The temporal orientation of the embedded proposition is provided by an additional variable (t_R in (11)), which is co-bound by the attitude verb, unless contextually resolved.

(11) $[_{ModP} [\Box_{w_1} \text{imp}_{2,c}] [_{TP} \lambda w_0 [_{T'} t_R [_{VP} ...]]]]$
     a. $[\![\Box]\!] = \lambda w_{\langle s \rangle}.\lambda t_{\langle i \rangle}.\lambda p_{\langle s,t \rangle}.\forall w'[w' \in f_{epistemic}(sp, w, t) \to p(w')]$ (sp = speaker)

Applying these tools to the embedded clause in (3), we obtain:

(12) $[_{CP} \lambda t_2 [_{ModP} [[\Box w_1] \text{imp}_{2,c}] [_{TP} t_2 [_{VP} $ 9 numero-primo $]]]]$

(13) $[\![(12)]\!] = \lambda w.\lambda t.\forall w'[w' \in f_{ep.}(sp, w, t) \to$ 9 is prime in w' at $t]$ (with $t < t_c$)
        $[\![(3)]\!] = 1$ iff $\exists t[t < t_c \ \& \ \forall \langle w'',t'' \rangle \in Bel(\text{Monica},w@,t) \to \forall w'[w' \in f_{ep.}(sp, w'', t'') \to$
        9 is prime in w' at $t'']$ (with $t'' < t_c$)

In (13), a simultaneous interpretation is derived by virtue of evaluating both the attitude and the embedded predicate with respect to t''. The system generates a similar interpretation for complex embeddings such as (5), if t_R is once again locally bound. However, it is the matrix predicate that supplies the source of knowledge to the speaker (i.e., Juan's prediction). Consequently, the most-embedded $\text{imp}_{2,c}$ can only access its antecedent via long-distance binding, as shown below.

(14) $[_{CP_1}$ PAST ... $[_{VP}$ Juan-apost- $[_{CP_2} \boxed{\lambda t_2}$ [FUT $[_{VP}$ María-decir $[_{CP_3} \lambda t_5 [_{ModP} [[\Box w_1]$
     $\boxed{\text{imp}_{2,c}}] [_{TP} t_5 [_{VP}$ tener-hambre $]]]]]]]]]$

Dispensing with technical details, (14) correctly captures the simultaneous reading of (5), while preserving the embedded imperfect's anteriority meaning (given that the framed tense ends up being bound by the time of Juan's prediction, which precedes t_c).

Epistemic imperfect and Variability: Under the current proposal, the X-marking puzzle receives a straightforward solution: present X-marked conditionals, despite carrying past tense morphology, do not feature any semantic past serving as an antecedent to the epistemic imperfect. By contrast, past X-marked conditionals involve an additional "real past" (cf. Kaufmann 2023). Crucially, the inter-speaker variation for (ii) may be attributed to different sensitivity to locality constraints, as (ii) sentences involve long-distance binding as opposed to (i).

References: **Abusch, D. (1988)**. *"Sequence of Tense, Intensionality and Scope"*. ● **Ferreira, M. (2017)**. "On the indexicality of portuguese past tenses." ● **Grønn, A., & Von Stechow, A. (2010)**. *"Complement tense in contrast:*

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