Temporal modifiers and the Romance imperfective

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Main types of analysis of the imperfective Aspect

(I) Extensional – **the *inclusion view***: relation between ET (Event Time) and Reference Time (RT)
- imperfective: RT ⊆ ET or RT⊂ET imperfective: RT is *included* in ET
- perfective: ET ⊆ RT or ET⊂RT (cf. Klein 1994 and much subsequent literature)

(II) Intensional – **the *incompleteness/ongoingness view***
(similar to the English progressive in Dowty-style analyses)
- perfective: a completed event is asserted
- imperfective: the event is not completed at RT; a part of it, from its beginning up to RT, is asserted in the current world of evaluation, its continuation is in the scope of a modal, it takes place only under normal circumstances (in inertia worlds)

Main claim: **the interaction of temporal modifiers with the imperfective, in Romance, supports (II) over (I)**

: only the asserted part of the event, from its left boundary (LB) up to RT is visible for temporal modification

This assymetry is unexpected in the inclusion view, where the LB-RT interval is not more special than the RT-RB interval

I. The data (cf. Crăiniceanu 1995, 2002 for Romanian, Giorgi & Pianesi 2004 for French and Italian, de Swart 1998 for French, Arosio 2003, 2010, 2019 for Italian, Arche 2014 for Sp.; I use Romanian data in what follows):

I.1 When describing **a single event**, the imperfect rules out temporal modifiers
(i) that localize the (whole) event (e.g. *in the evening, from 3 to 6*),
(ii) that refer to its right boundary (RB) (*until my departure*)
(iii) that express the extent of the whole event (*for 3 hours*):

(1) Când am ajuns, Maria scria **{*seara/ *de la 3 la 6 / *timp de trei ore / *până la plecarea mea}**. (Ro.)
'When I arrived, Maria wrote.IMPF (=was writing) {*in the evening / *from 3 to 6 / *until my departure /*for 3 hours}'.

Only ET-modifiers that involve the left boundary (LB) of the event are allowed:
(iv) LB localizers (e.g. *from/since 6*)
(v) modifiers measuring the extent from LB to RT (=Engl. *for*+perf.)

(2) Când am ajuns, Maria scria {**de la ora 3 / de trei ore**}.
Maria have.1 arrived Maria wrote.IMPF from hour-the 3 from 3 hours
'When I arrived, Maria had been writing {since 3 / for 3 hours}'.

This also holds for the present, on the relevant interpretation (single event, ET included in RT=UT):

(3) Sunt la Roma. *Stau aici **de ieri până mâine**.
'I'm in Rome. *I'm staying here from yesterday until tomorrow.'

Modifiers of type (i)-(iv) are acceptable with the perfective past:

(4) Ieri, Maria a scris {**seara/timp de trei ore/ până la plecarea mea**}
'Yesterday, Maria wrote {in the evening/until my departure /for 3 hours}'

Evidence that localizing modifiers with the perfective are not necessarily RT-oriented, as opposed to the imperfective:

(5) a. Maria a fost bolnavă în IULIE.
Maria has been sick in July 'Maria was.PFV sick in July'
b. ?# Maria era bolnavă în IULIE.
Maria was.IMPF sick in July 'Maria was.IMPF sick in July'
: OK in a context when an occasion is evoked based on the knowledge shared between speaker and hearer, and on that occasion Maria was sick
c. Maria era BOLNAVĂ în iulie.
Maria was.IMPF sick in July

Explanation: lack of stress indicates that the adverb belongs to the topical material, and RT is typically topical – see Klein (1994), who even replaces RT with the term 'topic time'; (5b) is an instance of choice between several possible topic times => the existence of an occasion in the shared knowledge is required

I.2 Multiple-event imperfectives (habitual, with Q-adverbs or other quantificational temporal modifiers) allow for the modifiers in (1) (types (i)-(iii)) to apply to the individual events in the scope of the quantifier:

(6) Pe atunci, lucram {**seara/ până seara / timp de 3 ore în fiecare zi**}.
'Back then, I worked.IMPF (= used to work) in the evening/until evening/ for 3 hours every day}'

But the ban on these modifiers surfaces again for the whole series of events (which only allows LB-oriented modifiers):

(7) Când am cunoscut-o, Maria mergea vara la Paris **{*din 1989 până în 1995/ *timp de 6 ani / de zece ani (deja)}.**
'When I met her, Maria went.IMPF (=used to go) to Paris in summer {*from 1989 until 1995 / *for 6 years/had been going... for ten years (already)}'

II. The problem: in the most widespread analysis, AspIMPF and AspPFV are similar, introducing the RT variable (that will be specified by Tense) and relating it to ET:

(8) IMPF = $\lambda P_{<v,t>} \lambda t \exists e.\ t \subseteq t(e) \ \& \ P(e)$
PFV = $\lambda P_{<v,t>} \lambda t \exists e.\ t(e) \subseteq t \ \& \ P(e)$

(see Klein 1994, Kratzer 1998, von Stechow 2002, Pancheva 2003, Paslawska & von Stechow 2003, Demirdache & Uribe-Etxebarria 2004, 2014, Arosio 2019, a.o.)
(6), (4), (5a) show that ET-modification is not excluded in principle (cf. also *He had left at 7 o'clock*). Then why should it be excluded only with the imperfective, in (1) and (7)?

III. My account: the imperfect (like the progressive in Dowty's analysis) introduces a split between the part of the event up to RT, which is asserted, and its continuation after RT, which is not asserted in the world of evaluation (i.e., the traditional view, which speaks of *incompletion,* is better than the one based on inclusion; for "partitive aspectual operators", see also Altshuler 2014)

(9) $Asp_{impf}(P)$ asserts the existence of an event(uality) in the world of evaluation *w* which holds at RT and is a stage of a P-event that continues after RT in all 'inertia worlds' of *w* (where inertia worlds, introduced in Dowty 1979, are defined along the lines of Landman (1992) and Portner (1998))

$[\![IMPF]\!] = \lambda P_{<v,t>} \lambda t \exists e\ (t \subseteq t(e) \wedge RB(t)=RB(t(e)) \wedge \forall w' \in Best(Circ, NI, e, P))\ \exists e'\ (P(e')(w'))$

(see Ferreira 2005, 2016 for Romance, Bary 2009 for Ancient Greek, Deo 2010 for Hindi)
=> The data show that **the 'whole' event (=partial event+continuations in the inertia worlds) is not available for temporal modification**

Compositional account:
- After an event is completed, its interval becomes accessible to modification, the property of events being turned into a property of times
- The imperfective combines with properties of events

(10) **Temp. location modifiers** (type (i)) take properties of times (are <it,it>) (Evidence: they can also modify the RT, see the initial phrases in ex.1,3,4)
=> they do not provide the <v,t> type (property of events) required by Asp_{impf}
$[\![$[between 3 and 4]$]\!] = \lambda P_{<i,t>} \lambda t\ [\ LB(t)=3o'clock \wedge RB(t)=4o'clock \wedge P(t)]$

=>

(11) In order to modify ET, temp. location modifiers (type (i)) rely on an operator BOUNDED of type <vt,it> that binds the e variable and introduces the ET-variable (unless the required vt->it mapping is done by extent modifiers, see (12))

$[\![BOUNDED]\!] = \lambda P_{<v,t>} \lambda t \exists e(P(e) \wedge t=t(e))$

(12) **Extent and *until*-modifiers** ((ii)-(iii)): as they cannot modify the RT, they are to be analyzed as mapping properties of events onto properties of times (type <vt,it>) => again,they do no provide the <v,t> type required by IMPF

⟦for 10 minutes⟧ $=\lambda P_{<v,t>}$:P is not quantized.$\lambda t.\exists e(P(e) \wedge length(t(e)) = 10' \wedge t=t(e))$

⟦until 3⟧ $= \lambda P_{<v,t>}$:P is not quantized. $\lambda t.\exists e(P(e) \wedge t=t(e) \wedge RB(t, 3o'clock))$

(13) **Asp_{pfv}, HAB, Q-adverbs** take properties of times => can embed BOUNDED

(14) HAB and Q-adverbs yield event-properties (are <it,vt>) => can be embedded under Asp_{impf} (for the idea that Q-adverbs introduce events, see Ferreira (2016))

⟦HAB⟧ $= \lambda Q_{<i,t>} \lambda P_{<i,t>} \lambda e.$ GEN t $((Q(t) \wedge t \subseteq t(e))) [\exists t'(P(t') \wedge R(t', t))]$

⟦always (C)⟧ $= \lambda P_{<i,t>} \lambda E \forall t [(C(t) \wedge t \subseteq t(E)) \rightarrow \exists t'(P(t') \wedge R(t',t))]$

(15) **LB-oriented extent modifiers** are actually <it,it> (von Stechow 2002): they specify an interval for which Asp_{impf}(P) holds and return the final subinterval

⟦*de* x-time⟧ $= \lambda P_{<i,t>}$:P is homogeneous. $\lambda t. \exists t'$ (XN(t',t) $\wedge$ length(t')=x $\wedge$ P(t')),
where XN ("extended now") = $\lambda t.\lambda t'$. t is a final subinterval of t'

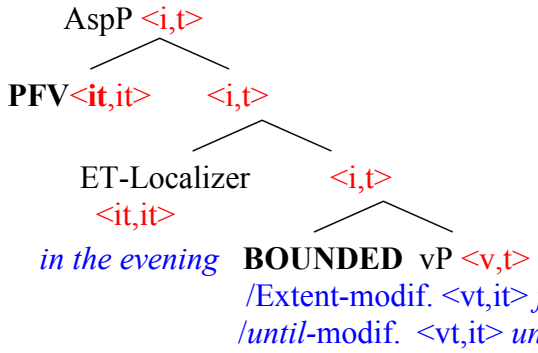
(16) LB-localizers, which may occur under all aspects, may be analyzed as <vt,vt>

⟦ *de* (AT (3 o'clock)) ⟧ $= \lambda P_{<v,t>} \lambda e$ [P(e) $\wedge$ AT (LB(t(e)), 3 o'clock)]

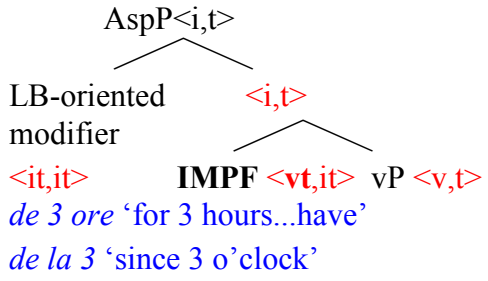
or, for imperfectives, as localizing the LB of the XN interval, as in (15):

⟦ *de* (AT (3 o'clock)) ⟧ $= \lambda P_{<i,t>}$:P is homogeneous. $\lambda t \exists t'$(XN(t',t) $\wedge$ AT(LB(t',3 PM)) $\wedge$ P(t'))

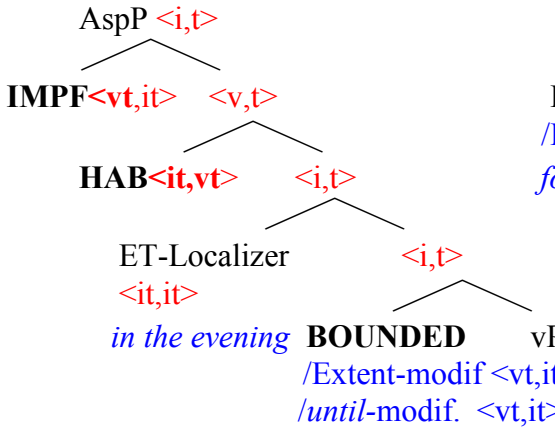
(17) Perfectives (ex.4,5a)



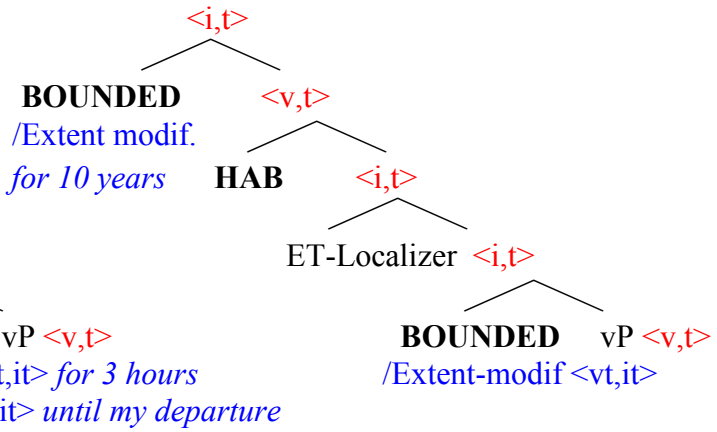
(18) Single-event imperfectives (ex.1-3)



(19) Multiple-event imperfectives (ex.6-7)



(20) Bounded multiple-events



References

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