

## **Perfects and the semantics/pragmatics interface**

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### **Résumé – Abstract**

Le but de cet article est double : (i) expliquer certaines observations trans-linguistiques à propos de la sémantique et de la pragmatique des parfaits, notamment quant au rôle joué par la notion de résultat(ivité), par opposition à celle de transition(alité) ; (ii) défendre l'idée qu'un traitement formel approprié des parfaits dans une perspective formelle, typologique et/ou diachronique devrait impliquer une théorie détaillée de l'interface sémantique/pragmatique.

The goal of this paper is twofold: (i) to clarify certain cross-linguistic observations about the semantics and pragmatics of perfects, particularly with respect to the role played by the notion of result(ativity) as opposed to that of transition(ality), and (ii) to argue that a proper treatment of perfects in a formal, comparative and/or diachronic perspective should involve a detailed theory of the semantics/pragmatics interface.

# 1 The aorist/perfect distinction and brands of perfects

In our view, perfects and aorists differ both pragmatically and semantically; we intend to offer here a treatment of perfects which reflects this fact. Intuitively, we define aorists as tenses expressing primarily the kind of change-of-state that makes the backbone of narrations (note that preterits do not qualify as aorists because they may not describe changes-of-state, cf. *Yannig loved Mona*), and perfects as tenses having an at least partially resultative meaning.

We are assuming in this paper the model of aspect developed in Caudal (to appear) and Caudal and Roussarie (to appear). Eventualities are generally considered to be decomposable into stages at least since Moens and Steedman (1988) (cf. also Smith, 1991, Kamp and Reyle, 1993). We consider that three types of stages should be distinguished (see Figure 1):

- (i) INNER STAGES are ‘core’ stages ascribed to all eventuality types (cf. Smith’s (1991) ‘developments’); they are selected by unmarked uses of the past progressive or of the simple past, and when they are non atomic (roughly, non punctual), by *begin* and *start*; if an eventuality is telic, the inner stage includes its terminus (culmination)<sup>1</sup>;
- (ii) PREPARATORY STAGES are causal stages instantiated for some types of atomic (punctual) telic eventualities; they are selected under prospective readings of the past progressive (cf. *John was winning the race*); moreover, they are peripheral to the stage structure (‘detachable’ from it, cf. Smith, 1991), having a presuppositional status (they remain valid under negation and modality; thus *John did not win (the race)* entails the validity of a preparatory stage);
- (iii) RESULT STAGES are ascribed to all eventuality types, with major differences between telic and atelic ones; they can be described by sentences in the perfect. According to us, result stages are not just stative predications over patients (such as *dead*’(e, john’) for ‘John died’); they can contribute eventuality referents in rather complex ways. We will not say more about this for want of space, but see Portner (2003) for a discussion.

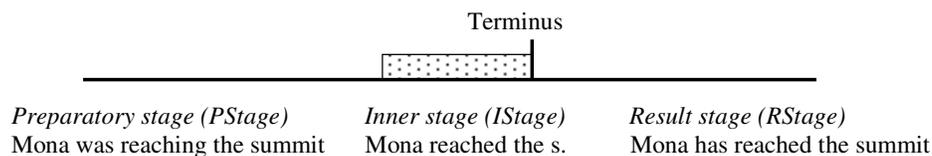


Figure 1: Stage structure for predicative structure *Mona – reach the summit*

## 1.1 Preliminary assumptions and goal of the analysis

We assume first that assertive utterances in some canonical perfect tense add a result stage to the truth conditions of discourse (perfects have resultative semantics), while disregarding the inference that the associated inner stage holds pragmatically (in discourse). In contrast, we assume that assertive utterances in a pure aorist tense (like the French *passé simple*) add an

<sup>1</sup> Going against a current trend in the literature, cf. e.g., Kamp and Reyle (1993), we do not regard terminuses (final points of inner stage) as stages, because tenses cannot focus on them isolatedly.

inner stage to the truth conditions of discourse, while making use of the inference that the associated result stage holds pragmatically; aorists express transitions between inner and result stages (stages must be causally ordered). Thus, the French *passé simple* (PS) rejects reverse causal order, whereas the *passé composé* (PC) accepts it, (1) (perfects do not require transitions nor causal ordering in discourse; canonical perfects even reject it).

- (1) a. *La maîtresse gronda* (PS) *mon fils. ??Il arriva* (PS) *en retard.*  
b. *La maîtresse a grondé* (PC) *mon fils. Il est arrivé* (PC) *en retard.*  
(‘The teacher scolded my son. He was late.’).

Starting from these hypotheses, we will show that several fairly distinct brands of perfects can be formally characterised, depending on how close they are to canonical perfects or aorists at the semantics/pragmatics interface. Both comparative and diachronic evidence supporting this view will be discussed here. It is common wisdom that perfects exhibit very different distributional and interpretative properties across languages, see e.g., Nedjalkov (1988), Giorgi and Pianesi (1997). We will notably focus here on (i) the (in)ability of perfects to combine with past time temporal adverbials such as *yesterday* or *at four*, and (ii) their (in)ability to occur with ‘narrative’ discourse relations such as *Narration* – the two most central distinctions between ‘pure’ perfects and perfects possessing aorist-like features. Note that in the rest of this paper, we take narrative discourse relations to require transitions as one of their preconditions, and transitions (i.e., changes-of-state) to require the accessibility of both an inner stage and a result stage at the semantics/pragmatics interface.

## 1.2 Diachronic evidence

According to Nedjalkov (1988), perfects are born when (stative) resultative forms are grammaticized. They typically evolve towards aorists afterwards, and can sometimes eventually become aorists (the French *passé simple* is thus derived from the latin *perfectum*).

The evolution of the French PC perfectly illustrates this cycle. Initially a purely resultative perfect<sup>2</sup>, it is now compatible with narrative rhetorical relations and past time modifiers. But there is an unexpected turn in this story: while the PC became compatible with temporal succession discourses (cf. (2)) as soon as the 11<sup>th</sup> century, it rejected *hier* (‘yesterday’) and other past time temporal modifiers until the 17<sup>th</sup> century (cf. Caudal and Vetters, 2003).

- (2) *Sun destre guant a Deu en puroffrit;*      ‘His right-hand glove, to God he offered it  
*Seint Gabriel de sa main l’ad pris.*      Saint Gabriel from his hand **took** (PC) it.  
*Desur sun braz teneit le chef enclin;*      Over his arm his head bowed down and slipped,  
*Juntes ses mains est alet a sa fin..*      Joining his hands, he **finished** (PC) his life.’  
(*The song of Roland*, CLXXVI, 2389-2395)

In other words, the PC went through at least three distinct phases as a perfect:

- (i) till the 11<sup>th</sup> century, it remained a pure resultative perfect, like the English *perfect*;

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<sup>2</sup> On the early history of the French *passé composé*, see Slobbe (to appear).



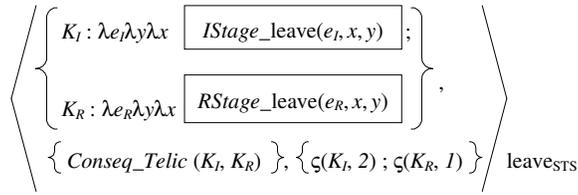


Figure 2: Stage structure for *leave*

On top of the rather semantic notion of aspectual viewpoint, we will also make use of the semantico-pragmatic notion of *illocutionary viewpoint* introduced in Caudal and Roussarie (to appear). It seems indeed that the aspectual content of tenses is crucially connected with illocutionary force. Thus, tenses associated with so-called imperfective viewpoints are cross-linguistically used to refer to counterfactuals or hypotheticals (cf. the French *imparfait*), while aorist tenses such as the French *passé simple* cannot accept similar readings (cf. Caudal, Veters and Roussarie, 2003). We take illocutionary viewpoints (IVPs) to capture the semantico-pragmatic content of a tense, cutting across the domains of time, modality, and aspect (in this sense, they encompass notably aspectual viewpoints). They can make aspectual propositional contents (i.e., stages) available for the computation of discourse relations. In short, IVPs characterize the rhetorical function of tenses at the semantics/pragmatics interface.

The present analysis is couched within a recent version of the SDRT framework. It includes notably a discourse semantic module containing speech act referents  $\pi$ , related by discourse relations – which are taken to be speech act types (cf. Asher and Lascarides 2003). Adopting another recent SDRT assumption, we take it for granted that two logical modules should be distinguished within the framework: the logic of information content aims at achieving discourse understanding within a model-theoretic semantics; the logic of information packaging aims at computing the rhetorical structure of discourse, notably by implementing pragmatic principles (see Asher and Lascarides 2003). This paper’s contribution to the SDRT framework is that it distinguishes between two crucially distinct kinds of pragmatic inferences (or *implicatures*): (i) discourse relevant pragmatic inferences which make their way into the Logic of Information Packaging (LIP) and can be used to compute discourse relations<sup>4</sup>, and (ii) other types of inferences, which do not structure discourse, and do not surface in the LIP. This distinction underpins our analysis of perfects, as the rest of the paper will show.

## 2.2 Perfects as *resultative* tenses

As in Portner (2003), much of the data exposed above is here accounted for in pragmatic terms. However, our analysis departs from Portner’s (2003) in two respects: (i) the aspectuo-temporal semantics we ascribe to perfects is far less vacuous than the one Portner proposes, and (ii) this semantics is explicitly articulated with pragmatic inferences which are allowed or blocked with the different kinds of perfects. In short, our solution is about the semantics/pragmatics interface, while Portner’s is about pragmatics alone.

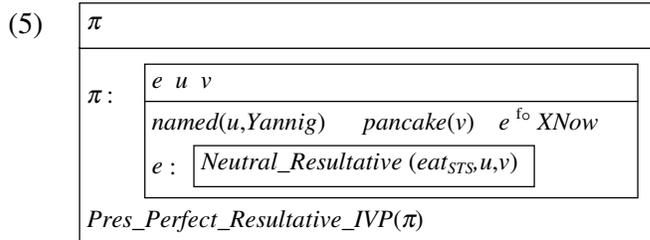
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<sup>4</sup> Diachronically speaking, they are ‘conventionalized’ pragmatic inferences, preparing a semantic evolution. They reflect the ‘lightest’ (and earliest) kind of linguistic conventionalization, possibly subject to strong communicative variations (i.e., contextual modification).

Specifically, we intend to show that ‘pure’ perfects (like the English *present perfect* or the PC in early old French) express a resultative aspectual viewpoint anchoring the result stage in some extended sort of present, while ‘aoriste-like’ perfects (like the modern PCs) express more complex aspectual viewpoints, anchoring not just one but two stages (namely, they also anchor the inner stage in the past). As seen above, we take aspectual viewpoints to assert certain stages semantically, possibly treating others as pragmatic inferences. This distinction accounts for many of the diachronical and comparative facts about perfects.

A brief semantic representation of pure resultative perfects (such as the English perfect) is given below in (5). The  $e$  discourse referent stands for the reification of the aspectuo-temporal interpretation of (4). It is described by the DRS following the adjacent semi-column (this use of DRSs as eventuality descriptors is borrowed from Kamp and Reyle (1993), and de Swart (1998);  $e: \boxed{P(x)}$  is somehow equivalent to  $P(e,x)$ ).  ${}^{\text{fo}}$  notes a left-overlap operator<sup>5</sup>, and  $XNow$  notes McCoard’s (1978) ‘eXtended Now’ interval, such that  $Now \text{ }^{\text{fo}} XNow$ . Therefore, the condition  $e \text{ }^{\text{fo}} XNow$  captures the ‘present relevance’ of the present perfect.

(4) Yannig has eaten his pancake.



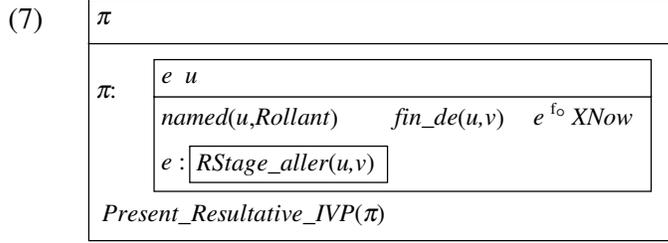
*Neutral\_Resultative* is the aspectual contribution of the simple present perfect. It consists in an aspectual viewpoint function which selects the result stage DRS  $\boxed{RStage\_eat(e,u,v)}$  in the stage structure of ‘eat’ ( $eat_{STS}$ ) (similar to Figure 2) and applies it to entities  $u$  and  $v$  ( $eat_{STS}$  being the contribution of the tenseless verb). Thus, a result stage becomes part of the compositional semantics of this sentence, i.e., of the truth conditions of discourse. Finally, the illocutionary viewpoint operator *Pres\_Perfect\_NeutralResultative\_IVP* takes care of the interpretation of the present perfect at the semantics/pragmatics interface. It does not make the associated inner stage accessible to the Logic of Information Packaging, thus preventing narrative rhetorical relations from being computed. This issue will be clarified below.

### 2.3 Canonical perfects vs aorist-like perfects: semantic issues

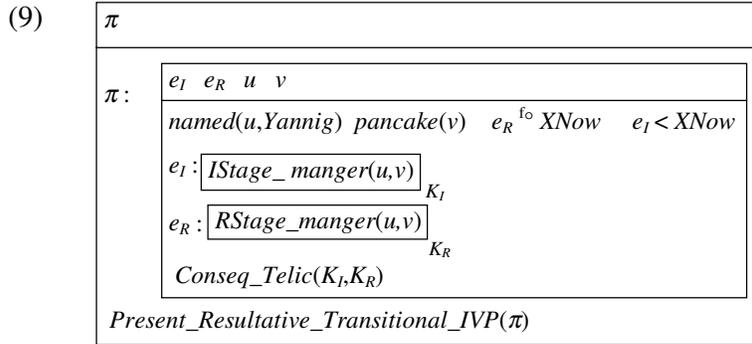
Recall that under our analysis, ‘pure’ perfects (such as early old French PC) differ from ‘aorist-like’ perfects (such as modern PC) because the latter are no longer exclusively resultative. First, they locate a result stage in the present and an inner stage in the past – both stages are part of the compositional semantics. Second, they allow for narrative discourse relations. A formal representation for old French PC (6) vs. modern PC (8) is given below.

<sup>5</sup> This operator is a non-proper ‘right overlap’ operator, such that if  $A \text{ }^{\text{fo}} B$  then  $A$  overlaps with at least the left-hand part of  $B$ . If  $A$  and  $B$  are temporal segments  $[a,a']$  and  $[b,b']$ , then  $a \leq b'$ ,  $b \leq a'$ , and  $a' \leq b'$ .

(6) Rollant *est alet* a sa fin. ('Rollant has died'.)



(8) Yannig a mangé sa crêpe. 'Yannig ate (PC) his pancake'.



In (7), the resultative stage DRS  $RStage\_aller(e, u, v)$  is the result of the application of a viewpoint function *PCResultative*(*aller*<sub>STS</sub>,  $u, v$ ), akin to *Neutral\_Resultative* in (5), although this function does not appear in the representation (for the sake of clarity, we note only the result of such functions henceforth). In contrast, a complex aspectual viewpoint function, *Resultative\_Perfective*, has been applied in (9). *Resultative\_Perfective* yields two stages and a stage relation between them when applied to the stage structure *manger*<sub>STS</sub>, namely the inner stage DRS  $K_I = \text{IStage\_manger}(e_I, u, v)$ , the result stage  $K_R = \text{RStage\_manger}(e_R, u, v)$  and the stage relation *Conseq\_Telic*( $K_I, K_R$ ). The aspectual contribution of (8) consists in two event referents, i.e.  $e_I$  and  $e_R$ . Since both an inner and result stage are introduced within the compositional semantics in (9), the inner stage becomes available for temporal modification (furthermore, the condition  $e_I < XNow$  anchors it in the past, so that only past time adverbials can modify it), and for the computation of narrative discourse relations at the semantics/pragmatics interface. It is not so in (7), where the inner stage is not semantically present.

The formal treatment proposed here accounts in a rather straightforward way for the inability of old, middle and classical French PC (vs. the ability of modern French PC) to combine with past time temporal modifiers (the (past) inner stage is missing, and the result stage is in fact present, cf.  $e \text{ }^{fo} \text{ } XNow$  in (7)). It also accounts for the possibility of establishing narrative discourse relations with modern PC. But the most tricky bit of data remains to be accounted for, i.e., the apparently paradoxical divorce between semantics and pragmatics in the case of middle French PC, which rejects past time modifiers but accepts narrative discourse relations.

## 2.4 Perfects and the semantics / pragmatics interface: a SDRT account

In short, the point we would like to make with respect to the perfect at the semantics/pragmatics interface is based on the following hypotheses. Narrative discourse

relations such *Narration* require transitions, i.e., require some inner stage and the associated result stage to be available for discourse reasoning at semantics/pragmatics interface. Therefore, it seems natural to render transitions unavailable for canonical perfects such as the English perfect or pre-11<sup>th</sup> French PC, and to license them for post-11<sup>th</sup> French PC.

However, in middle and classical French, although compatible with narrative discourse relations the PC still rejected past temporal modifiers. In other words, while its syntax and its semantics remained purely resultative, it was pragmatically aorist-like. How could we account for such a paradox of a tense whose pragmatics has divorced from its semantics?

Our solution out of this puzzle is the following: utterances in middle/classical French PC allow for an inner stage to be accessible to the logic of information packaging at the semantics/pragmatics interface, so as to establish (transitional) narrative discourse relations (e.g., *Narration*), while introducing only a result stage within the compositional semantics. Middle French PC must make it possible to infer that some temporally anterior inner stage holds pragmatically; the logic of information packaging can then draw on this inference to compute transitions, and transitional narrative rhetorical relations (e.g., *Narration*) can be established. On the contrary, canonical perfects do not render the inner stage accessible to the logic of information packaging, so that narrative discourse relations cannot be computed.

The following diagram summarizes the evolution of the PC in the light of such an analysis. Whenever both an inner and a result stage are computable within the same module of the theory (semantics or logic of information packaging, LIP), then a transition can be construed.

|                                 | <i>Early old French PC</i> | <i>11<sup>th</sup>-17<sup>th</sup> century PC</i> | <i>Post-classical PC</i> |
|---------------------------------|----------------------------|---------------------------------------------------|--------------------------|
| <b>Semantically contributed</b> | Result Stage               | Result Stage                                      | Inner + Result Stage     |
| <b>Computable in the LIP</b>    | Result Stage               | Inner + Result Stage                              | Inner + Result Stage     |

Figure 3: Diachronic evolution of the French *passé composé*

The central idea behind this diagram is that while resultativity was the PC's core informational content in early old French, it gradually coexisted with transitionality. Transitions (and narrative discourse relations) became computable first on pragmatic grounds, then on semantic grounds. Note that the English present perfect behaves like early old French: it prevents transitions from being computed even by cognitive and pragmatic means.<sup>6</sup>

The technical implementation we propose for this analysis involves *rules* which should be associated with the interpretation of tenses at the semantics/pragmatics interface, that is, within the Logic of Information Packaging (LIP). Thus rule (10) implicates the validity within the LIP of the inner stage  $K_{I\pi}$  underlying some speech act referent  $\pi$  to which the illocutionary

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<sup>6</sup> This analysis of perfects is related to the analysis of the French *imparfait* defended in Caudal, Veters and Roussarie (2003) inasmuch as it assumed that certain tenses allow informational content to be construed in spite of an apparently conflicting semantics. While the semantics of the *imparfait* is apparently associated with an imperfective viewpoint, it is nevertheless capable of appearing with discourse relations which normally require a perfective viewpoint (in contrast with the English progressive, which bars such readings).

viewpoint *Present\_Resultative* applies (cf. (7)). It makes  $K_{I\pi}$  (non-monotonically, cf. >) available for computing discourse relations such as *Narration*.

- (10) Rule about middle/classical French PC and the semantics/pragmatics interface:  
*Present\_Resultative*  $\_IVP(\pi) > K_{I\pi}$

The presence of an illocutionary viewpoint operator in the precondition of the rule reflects the role we ascribe to this notion: illocutionary viewpoints express the speaker's communicative perspective on the propositional content of her/his discourse. By influencing the establishment of discourse relations, it contributes to determining the nature of the speech acts at play (cf. Asher & Lascarides's (2003) definition of rhetorical relations as *relational speech acts*).

Of course, (10) should not be associated with the illocutionary operator (IVP) conveyed by early old French PC, nor should any comparable rule be associated with the IVP underlying the English present perfect or any other 'canonical' perfect. The absence of any such a rule makes inner stage DRSs inaccessible for computing discourse relations, and accounts for infelicitous discourses such as (11).

- (11) ??Yannig **has left** ( $\pi_1$ ). (Then) Mona **has arrived** ( $\pi_2$ ). (with *Narration*( $\pi_1, \pi_2$ ))

Note that rules such as (10) are independent from the truth conditions of discourse (i.e. the compositional semantics). Although triggered by the presence of an illocutionary viewpoint operator within the compositional semantics, their precise content and role are unrelated to semantics proper; they come into play only within the Logic of Information Packaging. They pertain to a layer of 'conventionalized' pragmatics associated with tenses, thus fitting the analysis we proposed for the diachrony of perfects in general, and of the PC in particular.

### 3 Conclusion

In contrast to Portner's (2003) (modal) pragmatic analysis of the present perfect's interpretation and distribution, we argued in this paper that perfects have a rich aspectuo-temporal semantics, and that it is essential to share evenly the burden of interpretation between semantics and pragmatics when trying to account for their distributional and interpretational properties. We proposed that depending on the kinds of perfects at stake (purely resultative, or more or less aorist-like), different treatment should be proposed in the semantics and at the semantics/pragmatics interface. When the inner stage is present in the compositional semantics (as in the case of modern PC), transitions and narrative discourse relations (e.g., *Narration*) can be computed straightforwardly (note that our account departs in that respect from de Swart & Molendijk 2002). When the inner stage is absent from the semantics, rules associated with illocutionary viewpoint operators can make it available for discourse reasoning within the Logic of Information Packaging, thus accounting for the possibility to establish narrative discourse relations even with pre-18<sup>th</sup> century PC. Crucially, these rules express *discourse relevant pragmatic inferences* (implicatures, in fact), in the spirit of Levinson's (2000:95-97) scalar, tense-triggered implicatures. This leaves room for 'discourse irrelevant' pragmatic inferences. Indeed, the validity of the inner stage can be inferred from any perfect, including the English present perfect. But this inference cannot be exploited in order to structure discourse; it is a 'weaker' kind of inference, so to speak.

An obvious extension of this analysis concerns aorists (like the French passé simple), which are incompatible with 'resultative' discourse relations (such as *Explanation* and *Result*), cf. (1); one would expect this property to be related to a tense-specific semantics/pragmatics interface. Last but not least, for want of space, a number of intriguing empirical properties of perfects haven't been addressed in this paper, such as the so-called 'life-span effects' of the English perfect (cf. ??*Einstein has visited Princeton* vs. *Princeton has been visited by Einstein*). In our view, Portner's (2003) and Inoue's (1979) ideas as to the role played by the notion of 'discourse topic in the treatment of such data remains an open question.

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