
Tense, Connectives and Discourse Structure

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Preceding chapters have shown that tense, grammatical and predicational aspect are very important clues in the process of temporal interpretation of sentences (chapter 14) and discourse (chapter 15). The present chapter investigates the interaction of tense with other temporal markers in the discourse, in particular temporal adverbials, and more specifically connectives, the linguistic elements that are used for connecting discourse segments.

Section 1 presents temporal adverbials from the point of view of their contribution to the structuring of discourse: they can have the role of connecting sentences thus contributing to the temporal discourse structure. On the basis of this, section 2 discusses a formal theory which aims at accounting for discourse structure, SDRT. Section 3 presents an application of standard SDRT to French data providing an account of the way in which temporal markers interact with discourse structure. Two connectives, namely *puis* ('then, afterwards') and *un peu plus tard* ('a bit later'), will be analyzed in more detail in order to display the often subtle differences in the behavior of these connectives, when different discourse relations hold. Section 4 will apply some of these insights to the role of time adverbials in a discourse in the Passé Composé.

1 Temporal adverbials and discourse connectives

Temporal connectives have a mixed character, for they belong both to the category of temporal adverbials and to the category of discourse connectives. We show how, for at least some elements, there is a natural extension from one function to the other.

We call *temporal adverbial* any kind of adverbial element or expression that has to do with temporal reference or expresses a temporal relation. Since we are not interested in morphological or lexical properties but in grammatical or discursive functions, no difference will be made between adverbs like *maintenant* ('now'), *demain* ('tomorrow'), *récemment* ('lately'), nominal phrases such as *le mois dernier* ('last month'), *le jour suivant* ('the following day'), prepositional phrases such as *depuis trois jours* ('for three days'), *dans la journée* ('during the day'), *à sa naissance* ('at his birth'), infinitival phrases such as *avant de partir* ('before leaving'), or conjunctive sentences such as *dès qu'il comprit* ('as soon as he understood'). So we consider as a temporal adverbial any temporal unit of the sentence that has an adverbial function, that is, any constituent that does not belong to the argumental structure of the sentence and refers to its temporal setting. But other distinctions do have to be made since, within the sentence, these temporal adverbials may be peripheral to the clause or integrated to some extent into its structure.

In studies on adverbials, different classifications have been proposed, depending on the properties that were highlighted: the position of the adverbial within the sentence, adverbial scope with respect to other constituents of the sentence, its application to the sentence content, etc. Among the criteria most often advocated, we will retain those we consider most appropriate for the category of temporal adverbials as a whole, and the category of temporal connectives in particular.

In the general classifications of adverbials developed by Quirk and Greenbaum (1973) for English, or Melis (1983), Guimier (1996), Lévrier and Molinier (2000), Nølke (2001), and chapter 11 (this volume) for French, temporal adverbials are always treated apart, as they don't fit well within the general framework defined for adverbials. For some of the authors, they are even explicitly considered as a special category, together with space adverbials (Nølke 2001: 260). In fact, the distinctions made to organize these general classifications cannot be directly exploited for temporal adverbials. Not only do they differ markedly from one author to another, but basically, they don't seem to apply successfully to temporal adverbials taken as a whole.

1.1 General view of temporal adverbials

The term *temporal adverbial* has a very loose and underdetermined status. Under the same form, an adverbial can fulfill different functions. Unless we talk of homonymy as some authors are inclined to do (Lévrier and Molinier (2000)), it is appropriate to isolate the different functions that temporal adverbials can fulfill within the sentence or across two sentences. For example, one can see that a temporal adverbial such as *tout de suite*, *aussitôt* or *immédiatement* ('at once, immediately') is taken as a manner adverbial in (1) and as a temporal connective in (2).¹

- (1) Le téléphone sonna mais il ne se leva pas immédiatement pour répondre.
'The phone rang but he did not get up immediately to answer.'
- (2) Les cloches se mirent à sonner. Immédiatement, ce fut le branle-bas dans le village
'The bells started ringing. Immediately, the whole village was in a turmoil.'

If we consider things at the most general level, the only common property that can be retained for the whole set of temporal adverbials is a semantic one: these adverbials provide explicit information for the temporal anchoring of eventualities presented and described in sentences and so they contribute to a coherent discourse. Their role is to introduce a new temporal referent or to create a relation with a temporal referent already given or calculated in a preceding sentence.

1.2 Temporal adverbials within the general system of adverbs

Temporal adverbials count as integrated adverbials, for they can be extracted, restricted, etc. as shown in (3):²

- (3) Ce n'est que le lendemain qu'il a téléphoné.
'It was only the day after that the telephoned.'

¹*Immédiatement* expresses some sort of consecutivity (quick reaction.)

²*Le lendemain* ('the day after') is an anaphoric time location adverbial, but it would be the same with deictic adverbials *lundi prochain* ('next Monday'), *dans trois jours* ('within three days') or with iterative or frequency adverbials, *chaque matin* ('every morning'), *souvent* ('often'), etc. Not all adverbials behave alike. Some frequency adverbials like *parfois* ('sometimes'), *quelquefois* ('sometimes'), *jamais* ('never'), *toujours* ('always') resist extraction and restriction, and others like *constamment* ('constantly'), *rarement* ('rarely'), *continuellement* ('continuously'), cannot be detached at the head of a negative sentence. Cf. chapter 12 (this volume) for more on adverbs of quantification.

But in an initial detached position, their function seems to be different, as their scope extends to the whole proposition and not only to the predicate in this position:

- (4) Le lendemain, il n'a pas téléphoné.
'The day after, he did not telephone.'
- (5) Il n'a pas téléphoné le lendemain (mais trois jours après)
'He did not telephone the day after (but three days after).'

Accordingly, we distinguish between the exophrastic function of an adverbial in an initial detached position, which involves application to the whole proposition, and the endophrastic function for other positions and other kinds of applications within the sentence.

Within the large category of temporal adverbials, there is a small group of adverbials known as 'relational temporal adverbials' (Nøjgaard 1992–1995) that is to be distinguished on the basis of both their syntactic and their semantic properties. Among them there are items such as *auparavant* ('before'), *entretemps* ('meanwhile'), *par la suite* ('afterwards'), *sur ce, après quoi* ('whereupon'), *dès lors* ('from that time'), *ensuite* ('then'), *enfin* ('lastly'), *puis* ('then'), etc. The function of these adverbials is primarily to act as relational elements that establish a transphrastic relation between their host sentence and the preceding sentence — or a preceding segment of text larger than a sentence. Their semantic content does not provide temporal reference; they mainly express chronological order — anteriority, simultaneity or posteriority — with a situation described in a preceding sentence:

- (6) Il décida de réserver une place mais auparavant, il tint à vérifier l'horaire.
'He decided to book a seat but before, he wanted to check the time-table.'

Sometimes, they can be used with an endophrastic function: they may be placed within the sentence, even in a position adjacent to the verb and they can be questioned with *quand?* ('when?') or be extracted in a cleft sentence with *c'est... que*:

- (7) Il entendit un grand bruit et ce n'est qu'ensuite qu'il vit de la fumée sortir par la fenêtre.
'He heard a big noise and it was only after that he saw some smoke coming out of the window.'

Frequently, they appear detached at the head of the sentence. This position is obligatory or quasi-obligatory for those that we call *pure linking adverbials*: *sur ce, après quoi* ('whereupon'), *puis* ('then'), *en-*

fin ('lastly'), etc. So, on account of their exophrastic function and of their relational link with a preceding context, this small group of adverbials can be considered as belonging to a larger category of temporal adverbials, that we call *transphrastic temporal adverbials*.³

1.3 Transphrastic temporal adverbials

A subset of the transphrastic adverbials is of particular interest to us. This subset consists of adverbials that establish a temporal connection with the preceding context. We establish a distinction between relational adverbials, referential anaphoric adverbials and aspectual-temporal adverbials.

Relational temporal adverbials. Relational temporal adverbials act primarily as linking elements. Some of them calculate the time interval between two eventualities: *deux jours après* ('two days after'), *deux ans avant* ('two years before'):

- (8) *Dimanche, elle lui écrivit pour l'inviter mais deux jours après, elle lui téléphona pour annuler l'invitation (i.e. deux jours après avoir écrit).*
 '(On) Sunday, she wrote him to invite him but two days later she telephoned to cancel the invitation (i.e. two days after writing)'

Others do not express a time interval at all but only chronological order: *ensuite* ('then'), *auparavant* ('before'), etc. Among them we find the so-called *discourse connectives* (cf. section 3 below).

Referential anaphoric adverbials. Referential anaphoric adverbials semantically introduce a temporal referent that is anchored to a reference point that is already identified, but that is necessarily different from the moment of speech, *le lendemain* ('the day after'), *la semaine suivante* ('the following week'), *l'année précédente* ('the preceding year'):

- (9) *Dimanche, elle lui écrivit pour l'inviter et la lettre arriva le lendemain.*
 '(On) Sunday, she wrote him to invite him and the letter arrived the day after.'

Note that *le lendemain* (the next day) which normally behaves as a simple anaphoric location adverbial in (9) can occasionally be considered as providing a temporal discursive link in (10).

³They establish a backward link outside the sentence. The term 'conjonctifs' (conjuncts) (Lévrier and Molinier (2000)) is not appropriate since it only applies to sentence adverbials.

- (10) Elle marcha sous la pluie toute la journée. Le lendemain, elle était clouée au lit avec 40° de fièvre.
 ‘She walked in the rain all day. The day after, she was in bed with a temperature of 40°.’

Transphrastic function. The same kind of transphrastic function can be fulfilled, more surprisingly, by adverbials that are not overtly anaphoric but express some kind of temporal modality — the idea of rapidity, suddenness, short interval — such as *soudain* (‘suddenly’), *immédiatement* (‘immediately’), *tout à coup* (‘all of a sudden’), *brusquement* (‘suddenly’, literally ‘abruptly’), etc. They are generally considered as a sort of manner adverbials under the name of *aspectual-temporal* adverbials (cf. Guimier (1996)). Their exophrastic function was illustrated in (2) for *immédiatement* (‘immediately’), but it would be the same with *brusquement* (‘suddenly’):

- (11) Il s’arrêta devant la maison. Brusquement, la porte s’ouvrit.
 ‘He stopped in front of the house. Suddenly, the door opened.’

So, when these three kinds of adverbials are initially detached in a sentence with a status of exophrastic adverbials, they establish a temporal transphrastic relation with the preceding sentence or the preceding text segment, a relation through which the eventuality described can be located or chronologically ordered. This temporal relation is to be interpreted as a discourse relation giving these adverbials the status of connectives.

We will now turn to the investigation of the role temporal adverbials may play at the discourse structure level. First, the issue of discourse structure will be addressed more generally with the presentation of SDRT (§ 2). Building on the present section and § 2, we compare the role of two connectives *puis* (‘then’) and *un peu plus tard* (‘a bit later’) in section 3. Section 4 treats the role of discourse connectives in stories told in the Passé Composé.

2 Discourse Structure

Discourse relations, that is, relations involved in the structuring of discourse, have been treated by many authors. They are known under different names — *rhetorical relations* (Grosz and Sidner (1986b); Mann and Thompson (1987)), *sentence relations* (Quirk and Greenbaum (1973)), *coherence relations* (Hobbs (1985); Sanders et al. (1992))— but the term that will be retained here is *discourse relations*, as used by Lascarides and Asher (1993) and Asher (1993).

Since we need to investigate the interactions between discourse structure and the semantic contribution of the temporal adverbials —as well

as that of the tenses, we have chosen a formal theory of the semantic-pragmatic interface, namely Segmented Discourse Representation Theory (SDRT). This section first presents the theoretical framework. We then discuss the discourse relations used to analyze narratives in more detail, with a special focus on the treatment of French past tenses.

2.1 SDRT

SDRT is a non-trivial extension of Discourse Representation Theory (DRT) as standardized in Kamp and Reyle (1993) that takes discourse structure—i.e. the relationships between discourse segments—into account and offers a theory of the semantics/pragmatics interface. Only a brief outline of SDRT will be given here.⁴

In SDRT, a discourse is represented by an SDRS. An SDRS is a recursive structure consisting of elementary DRSS—i.e. DRSS representing a single clause—and sub-SDRSS linked together by Discourse Relations, such as Narration, Elaboration, Background, Continuation, Result, Contrast and Explanation. These elementary DRSS and the sub-SDRSS corresponding to complex discourse segments are the *constituents* of the SDRS representing the discourse. We use Greek letters as variables for constituents, and K_i as constants.⁵

DRSS are often represented graphically as “boxes” (compare chapter 15). Thus, the sentence *Paul frappa à la porte* (‘Paul knocked at the door’) yields the DRS in Figure 1, where the upper part is the *universe of discourse*, that is, the set of discourse referents introduced by the sentence, and the lower part is the set of DRS-*conditions*.

x, l, y, e_1, n
Paul(x)
$l = ?$
porte-de(y, l)
$e_1 - \text{frapper-à}(\mathbf{x}, y)$
$e_1 \prec n$

FIGURE 1 DRS for *Paul frappa à la porte*.

SDRSS are also usually represented as boxes, the universe of discourse

⁴For a thorough presentation, see Asher (1993), Lascarides and Asher (1993), Asher (1996) and Busquets et al. (2001).

⁵An important element of sdrss is being neglected here, namely the *labels* that distinguish between different occurrences of the same constituent, while representing speech acts to some extent. Discourse relations link *labelled* DRSS and sdrss, not just the bare constituents, and the Greek letters are variables for labels.

being the set of its constituents, and the conditions being the description of each constituent and the discourse relations that link them. For example in Figure 2 we give a preliminary version of the SDRS for the small text *Paul frappa à la porte. Il entra* (He entered).⁶

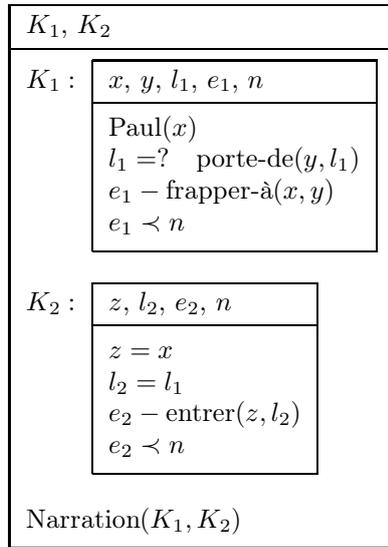


FIGURE 2 Preliminary SDRS for *Paul frappa à la porte. Il entra*.

SDRSs are built up incrementally. SDRT defines a *Glue Logic* and an *Update Function* that together determine a new SDRS for a given SDRS τ representing the context (the discourse already processed), and a new constituent α representing the information to be integrated into that context. The Glue Logic is embedded in the framework of so-called Commonsense Entailment developed in Asher and Morreau (1991), a logic that exploits both monotonic (\rightarrow) and non-monotonic ($>$) conditionals.⁷ The Glue Logic is specified by:

- definitions characterizing which constituents in τ are open for attaching α ,

⁶This SDRS misses one component: its topic. We will give the right representation of this small text below, where we also explain how it is built.

⁷ $\phi > \psi$ means “if ϕ then normally ψ ”. From $\phi > \psi$ and ϕ , Commonsense Entailment (CE) entails ψ ‘by default’, that is, defeasibly, in the absence of further information regarding the truth value of ψ . From $\phi > \psi$, ϕ and $\neg\psi$, CE no longer entails ψ , but $\neg\psi$. From $\phi > \psi$, $\zeta > \neg\psi$, $\phi \rightarrow \zeta$, ϕ and ζ , ψ (and not $\neg\psi$) is inferred (Penguin principle). From $\phi > \psi$, $\zeta > \neg\psi$, ϕ and ζ , if ϕ and ζ are logically independent, CE cannot conclude ψ nor $\neg\psi$ (Nixon Diamond).

- axioms detailing what discourse relations may be inferred, on the basis of a variety of linguistic and common knowledge clues, in order to actualize the attachment of α to some open constituent of τ ,
- axioms specifying the semantic effects of those discourse relations.

The Update Function is in charge of the proper hierarchization of the Structure and of the resolution of the possibly existing underspecifications (e.g., anaphora and ellipsis).

As far as the ontology of eventualities at the discourse level is concerned, SDRT builds on DRT, and assumes the same Davidsonian approach that considers events and states as individuals in the representation and in the models.

As in chapter 15, we assume that Imparfait sentences introduce state referents (cf. rule 48) and that Passé Simple sentences introduce event referents in the SDRS (cf. rule 35).

SDRT assumes that each event has two associated states: a prestate (presupposition) and a poststate (consequent state or implication). These states are not always explicitly referred to. For example, a poststate is introduced by a Passé Composé verb, but in Passé Simple sentences, both pre- and poststate remain implicit, and don't appear in the DRS. Even when explicitly introduced in the universe of discourse, their semantic content may not be quite clear. Depending on their predicational aspect, some verb phrases may have obvious preconditions and/or postconditions in their lexical semantics or not. For example, *sortir de la maison* ('to leave the house') clearly implies a prestate in which the agent is located in the house, and a poststate in which the agent is no longer in that place. In contrast, the pre- and poststate of a verb like *se promener* ('to stroll') have no definite semantic content. Nevertheless, we still assume that these two states may be described by something like, for the prestate, "is not strolling", and for the poststate, "is not strolling and has strolled". Finally, SDRT assumes that in each basic constituent, one eventuality is designated as the 'main eventuality'.

2.2 Discourse Relations

In the following, we only present the discourse relations that will be used to describe the discourse contribution of tenses and connectives: Narration, Result, Explanation, Elaboration, Continuation, Topic (denoted \Downarrow), Background and Contrast.

Building on previous work on discourse relations (Hobbs (1985), Grosz and Sidner (1986a) and Mann and Thompson (1987), among others), SDRT distinguishes coordinating relations from subordinating

ones. Explanation, Topic and Elaboration are subordinating, and the others coordinating. Only subordinating relations may introduce complex SDRSS. In other words, the Update Function may gather several SDRSS into a new complex SDRS only if these constituents are attached to the same site with the same subordinating relation. On the graphs depicting SDRSS, coordinating relations are usually denoted by horizontal lines and subordinating relations by vertical ones (see, for example, the graph representing the SDRS of (12) below, in Figure 4. Note also that in SDRT several discourse relations may simultaneously link the same two constituents, departing from other discourse approaches, notably RST (Mann and Thompson, 1987).

Narration. Narration is a relation which is based on the Gricean pragmatic maxim of manner *Be Orderly*. Two clauses linked by Narration describe two successive events ‘of the same story’. Building on the analyses of Lascarides and Asher (1993), Asher et al. (1995a,b) show that, in the absence of locating adverbials, a relation of Narration between two constituents α and β , entails a temporal overlap between the poststate $post(e_\alpha)$ of the main eventuality e_α denoted by α , and the prestate $pre(e_\beta)$ of the eventuality e_β denoted by β :

A 1 $Narration(\alpha, \beta) \rightarrow post(e_\alpha) \circ pre(e_\beta)$

A1 aims at capturing the fact that narratives must cohere in the sense that the events linked together by Narration must fit consistently and without significant spatio-temporal gaps, as expressed in Asher (1996) and observed in earlier work on temporal order in narratives, for example in Caenepeel (1989). This does not mean that there should be no interval of time between the two events e_α and e_β , but rather that no relevant event can occur during this interval. From A1 and uncontroversial ordering assumptions on events and their pre- and poststates, we can deduce a relation of temporal precedence between the events e_α and e_β : $e_\alpha \prec e_\beta$.⁸ Actually, temporal overlap is too weak to fully capture the ‘no-significant-gap’ constraint. It should be guaranteed that $post(e_\alpha)$ persists (at least) up to the beginning of e_β , and, conversely, that $pre(e_\beta)$ starts when (or before) e_α ends. So we propose here an improved version of A1, where \sqcap denotes the intersection operator.⁹

A 2 $Narration(\alpha, \beta) \rightarrow e_\alpha \supseteq (post(e_\alpha) \sqcap pre(e_\beta)) \supseteq e_\beta$

⁸Such as $Event(e) \rightarrow pre(e) \supseteq e \supseteq post(e)$, where \supseteq denotes temporal abutment, as used in DRT, or the ‘meets’ relation as used in Allen (1984).

⁹We assume that $s_1 \sqcap s_2$, when applicable, that is, when $s_1 \circ s_2$, yields a new state lasting the maximum interval of time during which both s_1 and s_2 hold, and whose propositional content is the conjunction of s_1 and s_2 ’s propositional contents.

For both A1 and A2, it is important to note that the consequent sub-formulas imply more than a temporal ordering between the four eventualities e_α , $post(e_\alpha)$, e_β and $pre(e_\beta)$. $Post(e_\alpha) \circ pre(e_\beta)$ entails that the propositional contents of these two states are compatible; the consequent of A2 entails in addition that there is no intervening event whose propositional content interferes with that of $post(e_\alpha)$ or of $pre(e_\beta)$. That is, no “relevant” event that ends $post(e_\alpha)$ before e_β ,

starts or prevents $pre(e_\beta)$ from holding right after e_α has ended.

Narration is motivated by the intuition that the elements of a Narration belong to the ‘same story’, i.e., they must have some common subject matter. To this effect, axiom A3 expresses that the constituents connected by Narration must have a common *topic*.¹⁰

A 3 $(\langle \tau, \alpha, \beta \rangle \wedge Narration(\alpha, \beta)) \rightarrow \exists \gamma (Contingent(\gamma) \wedge Topic(\gamma, \alpha) \wedge Topic(\gamma, \beta))$

A topic is contingent—that is, not vacuous, not contradictory, not tautological—and it subsumes the constituents of a sub-SDRS, in this case, the constituents linked by Narration. If not already present in the context, it has to be added to the SDRS during the update. A3 and the rules of the underlying logic imply that Narration can be non-monotonically inferred only if such a topic exists or can be built.

To illustrate these structural effects, let us consider the following simple example again:

(12) Paul frappa à la porte. Il entra.

‘Paul knocked at the door (S_1). He entered (S_2).’

This small text clearly tells the story of Paul arriving at someone’s home, room or office. Such a ‘topic’ is inferred only because the two sentences are textually linked together and in this order (try to think of other texts in which either sentence describes an event taking place in a different situation). In SDRT and with axiom A3, attaching the representation K_2 of S_2 in (12)— which is a DRS, because S_2 is a single clause—to that of its first one K_1 , yields the SDRS structure fully represented in Figure 3. The same information is given as a graph in Figure 4. In the latter figure, K^* is the topic and \mathcal{K} is the complex SDRS consisting of the two DRSs K_1 and K_2 . The oblique dashed lines represent this SDRS or sub-SDRS link.

According to Asher (1996), Narration is inferred “by default” if no other relation can be inferred, that is, if in the discourse there are no

¹⁰ $\langle \tau, \alpha, \beta \rangle$ means that β is to be attached to α in the SDRS τ (β follows α in the text structure). Topic is a subordinating discourse relation whose semantics essentially involves subsumption between the topic and the elements of the narrative it summarizes.

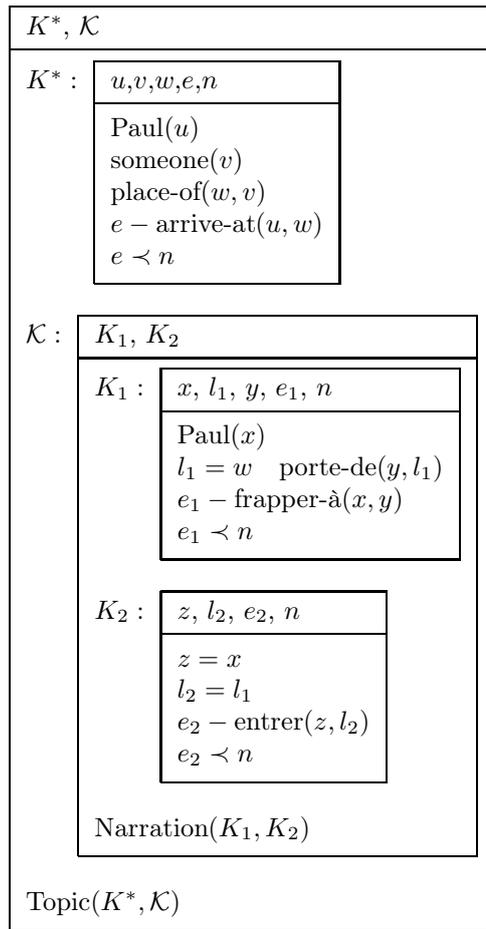


FIGURE 3 SDRS for 12

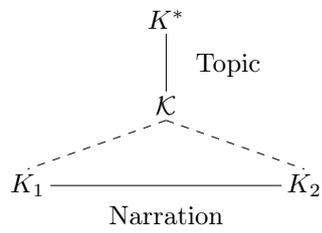


FIGURE 4 Graph representing the SDRS structure of Fig. 3

clues that other axioms could exploit to infer other discourse relations. This results in Axiom 4.

A 4 $(\langle \tau, \alpha, \beta \rangle \wedge \neg \text{Clues_}R_1(\tau, \alpha, \beta) \wedge \neg \text{Clues_}R_2(\tau, \alpha, \beta) \wedge \dots \wedge \neg \text{Clues_}R_n(\tau, \alpha, \beta)) > \text{Narration}(\alpha, \beta)$

Here $R_1 \dots R_n$ are all the discourse relations used in SDRT but Narration, and $\text{Clues_}R_i(\tau, \alpha, \beta)$ holds whenever the propositional content of α and β and the discourse structure of τ contain clues that could be exploited for inferring $R_i(\alpha, \beta)$.¹¹

Narration can be non-monotonically inferred if the predicate *Occasion* holds between the clauses to be related:

A 5 $(\langle \tau, \alpha, \beta \rangle \wedge \text{Occasion}(\alpha, \beta)) > \text{Narration}(\alpha, \beta)$

Occasion holds if the two clauses contain clues indicating that their main eventualities are of types that may belong to “the same story”. Occasion exploits lexical semantics and shared knowledge in terms of scripts connecting certain event types in sequences in which one event ‘naturally’ leads to the next. (12) is an example of Narration where Occasion holds, for there is a script in which people knock on the door before entering. This kind of script may be encoded in the following axiom A 6.¹²

A 6 $(\text{frapper-à}(e_\alpha, x, y, \alpha) \wedge \text{porte-de}(y, z, \alpha) \wedge \text{entrer}(e_\beta, x, z, \beta)) \rightarrow \text{Occasion}(\alpha, \beta)$

In (12), the sequence of events is only typical. Obviously, stronger dependency links between event types like Precondition and Cause also give rise to Occasion—and by non-monotonic inference, Narration. But some of these links are also exploited to infer more specific discourse relations, such as Result.

Result. A Result relation between constituents α and β expresses the narrator’s intention to signify that β is a result of α (or α results in β). It has the semantic effect

of implying a causal link between the main eventualities of the constituents it relates:

A 7 $\text{Result}(\alpha, \beta) \rightarrow \text{Cause}(e_\alpha, e_\beta)$

The predicate $\text{Cause}(e_1, e_2)$ —to be read e_1 causes e_2 —implies, among

¹¹SDRT explicitly states that there should be a finite set of discourse relations. For present purposes, we restrict the discussion to: Narration, Background, Elaboration, Continuation, Topic, Result, Explanation, and Contrast, for which an SDRT account can be found in the literature.

¹²A DRS-condition $\phi(x_1, \dots, x_n)$ appearing in the constituent (labelled by) α is written in the Glue Logic with α as an extra argument: $\phi(x_1, \dots, x_n, \alpha)$

other things, that if e_1 and e_2 are events, the first temporally precedes the second:

A 8 $(Cause(e_1, e_2) \wedge Event(e_1) \wedge Event(e_2)) \rightarrow e_1 \prec e_2$

If e_1 is an event and e_2 a state, e_2 immediately follows e_1 :

A 9 $(Cause(e_1, e_2) \wedge Event(e_1) \wedge State(e_2)) \rightarrow e_1 \supset e_2$

Result may be monotonically inferred on the basis of the presence in β of a marker of causation such as *donc* (therefore) in (13).¹³

(13) Max a eu son bac en juillet dernier. Donc il a pu entrer à l'université en septembre.

'Max passed his A-levels last July. Therefore he was able to go to the university in September.'

A 10 $(\langle \tau, \alpha, \beta \rangle \wedge donc(\beta)) \rightarrow Result(\alpha, \beta)$

Result can also be non-monotonically inferred on the basis of lexical semantics or shared knowledge of the event types in α and β , as in the well-known examples from Hinrichs (1981) and Hinrichs (1986):

(14) Tarzan poussa Jane. Elle tomba.

'Tarzan pushed Jane. She fell.'

(15) Max éteignit la lumière. Il faisait nuit noire autour de lui.

'Max switched off the light. It was pitch dark around him.'

In (14) and (15), generic script-like information on pushing and falling, and on switching off the light event types and being dark state types that enables one to recover the causal links that the narrator wants to express. The presence of clues indicating a possible causal link is expressed by the predicate *D-Permissible-Cause* where *D-Permissible-Cause*(α, β) means that α describes an eventuality which is a possible cause for β 's main eventuality. For instance, Axiom 11 encodes a plausible piece of shared knowledge.¹⁴

A 11 $(push(e_\alpha, x, y, \alpha) \wedge fall(e_\beta, y, \beta)) \rightarrow D-Permissible-Cause(\alpha, \beta)$

which is in turn exploited by Axiom 12 to (defeasibly) infer Result:

A 12 $(\langle \tau, \alpha, \beta \rangle \wedge D-Permissible-Cause(\alpha, \beta)) > Result(\alpha, \beta)$

Explanation. The classical example (14) is from Lascarides and Asher (1993):

¹³*Donc* has other meanings, which do not denote a "material consequence", but rather a logical or argumentative consequence, as in *Il a réussi à faire l'exercice, donc il a bien compris le cours* ('He succeeded in solving the problem, therefore he understood the class well').

¹⁴Taking advantage of a well-structured lexicon, such axioms can be generalized, avoiding writing a rather tedious series of axioms, see Asher and Lascarides (1998).

(16) John fell. Max pushed him.

It illustrates the relation of Explanation, Result's inverse relation, that can be triggered by Axiom 13, where $Explanation(\alpha, \beta)$ means that α is explained by β , that is, β explains α .

A 13 $(\langle \tau, \alpha, \beta \rangle \wedge D\text{-Permissible-Cause}(\beta, \alpha)) > Explanation(\alpha, \beta)$

In French, it is not possible to express an explanation with a sequence of sentences in the Passé Simple, as shown in chapter 15 (this volume), so we need the following rule:

A 14 $(\langle \tau, \alpha, \beta \rangle \wedge PS(e_\alpha, \alpha) \wedge PS(e_\beta, \beta)) \rightarrow \neg Explanation(\alpha, \beta)$

but it can be done with a sequence of sentences in the Passé Composé:

(17) Jean est tombé. Paul l'a poussé.
'Jean fell (PC). Paul pushed (PC) him.'

or by a sequence of sentences in the Passé Simple + Imparfait or Passé Composé + Imparfait:

(18) Marie arriva/est arrivée en retard au cinéma. Elle attendait son mari à la maison et c'était lui qui devait garder les enfants.
'Marie arrived (PS/PC) late at the cinema. She was waiting (IMP) for her husband at home and he was the one who had to look after the children.'

Result is a coordinating relation, whereas Explanation is subordinating.

Elaboration. Elaboration is a subordinating discourse relations, i.e., a relation that introduces a complex constituent, a SDRS containing a sub-SDRS. A famous example of Elaboration from Kamp and Rohrer (1983) was given in chapter 15, and is repeated here as (19):

(19) L'été de cette année-là vit plusieurs changements dans la vie de nos héros. (S_1) François épousa Adèle (S_{2a}), Jean-Louis partit pour le Brésil (S_{2b}) et Paul s'acheta une maison à la campagne (S_{2c}).

S_1 is elaborated by the complex S_2 . It provides the topic for each of the changes described in the following clauses. Between K_1 , the constituent representing S_1 , and each of K_{2a} , K_{2b} and K_{2c} , an Elaboration relation holds. Between K_{2a} and K_{2b} , and between K_{2b} and K_{2c} , a so-called Continuation relation holds.

Continuation is a rather weak discourse relation. It merely records that all the constituents of a complex SDRS connected to a constituent by a subordinating relation are siblings. It has no temporal effects (cf. also section 4 below). Elaboration implies that the main eventuality of each elaborating clause is a (proper) part of that of the elaborated

clause, which in turn implies that there is a (strict) temporal inclusion between them:

A 15 $Elaboration(\alpha, \beta) \rightarrow Part-of(e_\beta, e_\alpha)$

A 16 $Part-of(e_1, e_2) \rightarrow e_1 \subset e_2$

Elaboration is triggered by the lexical semantics of the event predicates involved, or by shared knowledge on event types and subtypes. The predicate *D-Permissible-Subtype* gathers all these clues allowing to non-monotonically infer Elaboration:

A 17 $(\langle \tau, \alpha, \beta \rangle \wedge D-Permissible-Subtype(\alpha, \beta)) > Elaboration(\alpha, \beta)$

Contrast. Contrast is a structural relation, as it is usually triggered by a partial isomorphism on the syntactic trees of the two constituents and the presence of contrasting themes (cf. (Asher, 1993; Asher et al., 2001)).

A 18 $(\langle \tau, \alpha, \beta \rangle \wedge Structurally-similar(\alpha, \beta) \wedge Contrasting-themes(\alpha, \beta)) > Contrast(\alpha, \beta)$

It can also be monotonically inferred by the presence of an explicit marker of contrast like *but* or *mais* in French:

A 19 $(\langle \tau, \alpha, \beta \rangle \wedge mais(\beta)) \rightarrow Contrast(\alpha, \beta)$

Here is an example taken from Asher (1996):

- (20) As-tu acheté le livre? Oui, je l'ai acheté, mais je l'ai prêté.
'Did you buy the book? Yes, I bought it but I lent it.'

Contrast(α, β) implies that α and β have incompatible implicatures, i.e., that from the propositional content of α one can derive a fact whose negation can be derived from the propositional content of β . Contrast has no temporal effects. In (20), both Contrast and Narration are inferred, for the relation between buying and lending triggers a relation of Occasion.

Background. This relation is inferred from aspectual discontinuities such as a change of type of temporal referent, e.g. an event followed by a state. In (21), the Passé Simple in S_1 introduces an event referent, while the Imparfait in S_2 introduces a state referent.

- (21) Paul entra. Marie faisait la vaisselle.
'Paul entered (PS) (S_1). Mary was doing (IMP) the dishes (S_2).'

The triggering axioms for the Background relation when aspectual discontinuities are encountered are the following, where *Background1*(α, β) means that α is the foreground and has β as background, and *Background2*(α, β) means that β is the foreground and has α as background:

A 20 $(\langle \tau, \alpha, \beta \rangle \wedge \text{Event}(e_\alpha) \wedge \text{State}(e_\beta)) > \text{Background1}(\alpha, \beta)$

A 21 $(\langle \tau, \alpha, \beta \rangle \wedge \text{State}(e_\alpha) \wedge \text{Event}(e_\beta)) > \text{Background2}(\alpha, \beta)$

Background affects the semantic contents of discourse. Axioms 22 and 23 give its temporal effects: enriching the discourse representation with a temporal overlap between the two eventualities.

A 22 $\text{Background1}(\alpha, \beta) \rightarrow e_\alpha \subset e_\beta$

A 23 $\text{Background2}(\alpha, \beta) \rightarrow e_\beta \subset e_\alpha$

Like Narration, Background also has structural effects. When a Background relation holds, a new sort of topic, a *Foreground-Background Pair* (FBP) is built. This new constituent is the fusion of the two constituents linked by the relation, that is, the foreground and the background.¹⁵

A 24 $\text{Background1}(\alpha, \beta) \rightarrow \exists \gamma \text{FBP}(\gamma, [\alpha, \beta])$

A 25 $\text{Background2}(\alpha, \beta) \rightarrow \exists \gamma \text{FBP}(\gamma, [\alpha, \beta])$

Asher et al. (1995a) show that examples like (22) can be accounted for with this new FBP structure.

- (22) Marie entra dans la librairie. Un homme lisait un journal près de la caisse. Elle s'approcha de lui.
 'Marie entered the bookshop (S₁). A man was reading a newspaper near the cashdesk (S₂). She got closer to him (S₃).'

In this example, a Narration relation should temporally order the eventualities of K_1 and K_3 and, at the same time, the information the background of K_2 needs to be used to solve the anaphoric pronoun *lui* in S_3 .¹⁶ According to Asher (1996), the new constituent K^* , the FBP of the complex SDRS constituted of the foreground K_1 and the background K_2 (sloppily noted $[K_1, K_2]$) becomes a possible attachment site for K_3 by Narration, which both yields the right temporal order and enables the right anaphora resolution.

In such a discourse structure, Axiom 2 on Narration makes it possible to infer $e_1 \prec e_3$, for the main eventuality of K^* is e_1 , according to the first of the following axioms:

A 26 $(\text{FBP}(\gamma, [\alpha, \beta]) \wedge \text{Background1}(\alpha, \beta)) \rightarrow e_\gamma = e_\alpha$

A 27 $(\text{FBP}(\gamma, [\alpha, \beta]) \wedge \text{Background2}(\alpha, \beta)) \rightarrow e_\gamma = e_\beta$

¹⁵ $[\alpha, \beta]$ is short for the complex SDRS constituted of α and β .

This axiom actually should be written: $\delta = [\alpha, \beta \mid \text{Background1}(\alpha, \beta)] \rightarrow \exists \gamma \text{FBP}(\gamma, \delta)$, using DRS notation à-la-Muskens.

¹⁶ K_1 , K_2 and K_3 are the basic constituents representing S_1 , S_2 and S_3 , respectively.

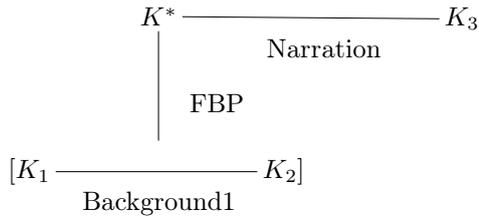


FIGURE 5 The graph of the SDRS representing 22

2.3 Conclusion: Tenses and Discourse Relations

In this section, we have proposed an application of SDRT to French narratives. It has been shown how the rules settled on in chapter 15 to deal with past tenses such as the *Imparfait*, *Passé Simple* and *Passé Composé*, can be accounted for in the SDRT framework.

It has been shown that two consecutive sentences in the *Passé Simple* can yield two possible temporal orderings, namely temporal succession when *Narration* holds as in (12) or when *Result* (possibly together with *Narration*) holds as in (14); and temporal inclusion when *Elaboration* holds as for the two first sentences of (19). It is also possible to have two *Passé Simple* sentences bearing no textually expressed temporal ordering, as is the case between two sentences related by a *Continuation* relation within a complex segment, that, for instance, elaborates a previous topic sentence as in S_{2a} , S_{2c} and S_{2c} in (19).

We also explained that a sequence of sentences in the *Passé Simple* and *Imparfait* in both orders can yield four possible temporal relations: temporal inclusion, in one direction or another, when *Background* holds as in (21) (and similarly with an *Imparfait* sentence before a *Passé Simple* sentence); temporal succession when *Result* holds as in (15); temporal precedence when *Explanation* holds as in (18).

3 Connectives, Discourse Structure, and Simple Past Tenses (*Passé Simple* and *Imparfait*)

In this section, we compare the behavior of connectives such as *puis* ('then, afterwards') and *un peu plus tard* ('a bit later') in combination with the *Passé Simple* and the *Imparfait* in order to find out to what extent they affect Discourse Structure. These two temporal connectives are semantically quite close, since they both express temporal succession, although we have seen in Section 1 that they belong to two different categories of temporal adverbials. *Un peu plus tard* represents the class of adverbials *NP plus tard/après* that establishes a relation of succession between two temporal referents. *Puis* represents the class of

pure linking adverbials (cf. section 1).

3.1 Connecting two *Passé Simple* sentences

The comparison starts with *puis* and *un peu/NP plus tard* in cases in which they connect two *Passé Simple* sentences:

- (23) a. L'acide tomba dans le mélange. Une explosion se produisit.
'The acid fell into the mixture. An explosion happened.'
- b. L'acide tomba dans le mélange. **Puis** une explosion se produisit.
'The acid fell into the mixture. Then an explosion happened.'
- c. L'acide tomba dans le mélange. **Un peu plus tard** une explosion se produisit.
'The acid fell into the mixture. A bit later an explosion happened.'

The three examples all express a relation of temporal succession between the two events. But in (23a), the explosion event is not only interpreted as posterior to, but also as a result of the acid falling event. This interpretation is preserved in (23c), but it is lost in (23b). With *puis*, the events are presented from an external point of view, as if the speaker did not intend to express a resultative link.

Let us now look at (24):

- (24) a. La petite fille s'endormit. Il se mit à pleuvoir.
'The little girl fell asleep. It began to rain.'
- b. La petite fille s'endormit. **Puis** il se mit à pleuvoir.
- c. La petite fille s'endormit. **Un peu plus tard**, il se mit à pleuvoir.

The use of *puis* in (24b) is not as straightforward as the use of *un peu plus tard* in (24c). In order to interpret (24b), one has to imagine a specific context (possibly established in a previous piece of text), for example "the story of a little girl lost in the woods", in which the contribution of each sentence to the coherence of the discourse is more obvious (the rain being a potential nuisance concerning her good sleep). *Un peu plus tard* does not require this kind of constraint.

The difference is less important when the text itself describes two events that are clearly linked together, as in (25):

- (25) a. Marie écrivit une longue lettre à son cousin. Elle alla la poster au village voisin.
'Marie wrote a letter to her cousin. She went to the next village and posted it.'
- b. Marie écrivit une longue lettre à son cousin. **Puis** elle alla la poster au village voisin.

- c. Marie écrivit une longue lettre à son cousin. **Un peu plus tard**, elle alla la poster au village voisin.

No particular context is needed to interpret (25b) and (25a). Nevertheless, the events seem to be more disconnected in (25c) than in (25b) or (25a). The intuitions described above may be accounted for in the SDRT framework developed in section 2 above.

***Puis* and *un peu plus tard* with Narration.** In Bras et al. (2001b), it is argued that *puis* is a rhetorical marker which introduces a relation of Narration:

A 28 $(\langle \tau, \alpha, \beta \rangle \wedge \textit{puis}(\beta)) \rightarrow \textit{Narration}(\alpha, \beta)$

In both (24a) and (24b), a Narration relation is inferred, either by default with A4 for (24a), or due to *puis* with A28 for (24b). To account for the different interpretation in (24c), we hypothesize that *un peu plus tard* blocks Narration. Axiom A2 on Narration states that the intersection of the poststate of e_α and the prestate of e_β exists and fills the interval between the two events. This means that the events must fit consistently and without significant spatio-temporal gaps. A2 uses a material implication. That is, if the consequent (the no-significant-gap condition) does not hold, Narration does not hold. A way to test the possibility of a relevant spatio-temporal gap between the two events is to try and insert a third event between e_α and e_β that terminates *post*(e_α) (cf. Caenepeel (1995)). An event whose poststate is incompatible with *post*(e_α) would be the event of the little girl waking up.

- (26) a. La petite fille s'endormit. Il se mit à pleuvoir. *Elle venait juste de se réveiller (She had just woken up.). /*Entretemps elle s'était réveillée (Meanwhile she had woken up.).
- b. La petite fille s'endormit. **Puis** il se mit à pleuvoir. *Elle venait juste de se réveiller./*Entretemps elle s'était réveillée.
- c. La petite fille s'endormit. **Un peu plus tard**, il se mit à pleuvoir. Elle venait juste de se réveiller./Entretemps elle s'était réveillée.

The test on the temporal effect of Narration fails in (26c). It is successful in (26a) and (26b), as the insertion of an intermediate event appears to be very difficult. Let us insist on the fact that the above examples are built in such a way that the intermediate events actually imply the end of *post*(e_α), hence involve a temporal *relevant* gap between e_α and e_β . Otherwise, the adding of another event with *entretemps* poses no problem. For instance, (27) is perfectly acceptable, for the falling of the night does not imply that the little girl is no longer asleep.

- (27) La petite fille s'endormit. **Puis** il se mit à pleuvoir. Entretemps la nuit était tombée ('Meanwhile the night had fallen.').

Let us also note that it might be possible to improve (26a) and (26b), by introducing the third event with something like "*Ajoutons/précisons que, entretemps, la petite fille s'était réveillée*" ('Let us add/point out that, meanwhile, the little girl had woken up'). In such a case, however, there is an explicit correction, and so it is not surprising that the temporal effects of Narration should be revised.

The second semantic effect of Narration is the topic requirement A3. A thematic link is required between the two events in (24a) and (24b). Since it is difficult to infer the topic from the propositional contents of the text alone, the requirement entails that the text will be felicitous only when inserted in a larger context providing the topic. The topic requirement is stronger in (24b). This is an indication that *puis* requires more than a simple Narration relation. We leave this aside for now, and turn to the difference between *puis* and *un peu plus tard*. No special context is needed to interpret (24c). This is further evidence for the accuracy of the hypothesis that *un peu plus tard* blocks Narration.

Now, if the relation between the sentence β introduced by *un peu plus tard* and the sentence α is not Narration, what is it? Of course, *un peu plus tard* contributes a temporal relation of succession between the events. But apart from this, and as noticed above, the relation between α and β does not match the semantic effects of Narration. (24c) being a coherent (acceptable) discourse, another discourse relation must hold.¹⁷ We hypothesize that it should be a relation that only supports temporal precedence, that could be viewed as a kind of 'weak Narration'. In this perspective, Narration is a gradual relation that normally occurs under its "strong form" (what we have been calling Narration up to now), and always at least under its weak form:

A 29 $Narration(\alpha, \beta) > Strong-Narration(\alpha, \beta)$

A 30 $Narration(\alpha, \beta) \rightarrow Weak-Narration(\alpha, \beta)$

This change implies updating the axioms given earlier: *Narration* has to be replaced by *Strong-Narration* in the axioms A2, A3, A5 and A28, but in A4, the general *Narration* relation predicate remains.

Weak-Narration has no requirement on topic nor does it have the 'no-significant-gap constraint'. The only semantic effect of Weak-Narration is temporal precedence:

¹⁷In SDRT in a coherent discourse, any constituent must be linked by a discourse relation to some previous constituent. In a two-sentence text, this means that the two constituents representing the two clauses must be linked together.

A 31 *Weak-Narration*(α, β) $\rightarrow e_\alpha \prec e_\beta$

With such limited semantic effects, *un peu plus tard* is obviously compatible with *Weak-Narration*. It must be noted though, that we do not consider adverbials of this kind as rhetorical markers of this relation. Unlike *puis*, they do not syntactically behave as conjuncts. Moreover, their main semantic contribution materializes compositionally within the constituent itself, specifying not only temporal succession between two temporal referents, but also the length of the temporal interval between these referents.

Let us now return to example (25) in the light of these considerations on the role of *un peu plus tard*. In both (25a) and (25b), a *Strong-Narration* relation will be inferred: for (25a), *Occasion* holds and A5 is triggered; for (25b), the presence of *puis* triggers (A28). Unlike (24), *Occasion* holds in both cases, and thus it is easy to build a topic common to both sentences. The example in (25c) is perfectly all right, but bears a slightly different interpretation: here the strong link between the two events is lost. It is indeed quite possible to introduce an intervening event, as (28a) shows, while this is not possible for the two other examples, viz. (28a) and (28b).

- (28) a. Marie écrivit une longue lettre à son cousin. Elle alla la poster au village voisin. *Entretemps, elle l'avait retouchée à plusieurs reprises ('Meanwhile she had altered it several times.').
- b. Marie écrivit une longue lettre à son cousin. **Puis** elle alla la poster au village voisin. *Entretemps, elle l'avait retouchée à plusieurs reprises.
- c. Marie écrivit une longue lettre à son cousin. **Un peu plus tard**, elle alla la poster au village voisin. Entretemps, elle l'avait retouchée à plusieurs reprises.

Therefore, *un peu plus tard* blocks *Strong-Narration* not only when it could have been inferred by default, but also when *Occasion* holds. To account for this blocking, the following axioms must be introduced:

A 32 (*Narration*(α, β) \wedge *un peu plus tard*(β)) $>$ \neg *Strong-Narration*(α, β)**A 33** ($\langle \tau, \alpha, \beta \rangle \wedge$ *Occasion*(α, β) \wedge *un peu plus tard*(β)) $>$ \neg *Strong-Narration*(α, β)

A32 will block the inference of *Strong-Narration* in the absence of other relations (i.e., a *Strong-Narration* that could have been inferred with A4 and A29). A33 is needed as well for the cases in which *Occasion* holds. Applying the Penguin Principle, it circumvents a Nixon Diamond

schema between A5 and A32 that would preclude the inference of any relation at all (compare footnote 7 above).

Coming back again to (25) we observe that the perception of a difference between (25a) and (25b) on the one hand, and (25c) on the other hand, is certainly also due to a particularity of *un peu plus tard* concerning plans. As a matter of fact, the presence of *un peu plus tard* has the effect of blocking the interpretation that events e_α and e_β are part of a plan (a plan in which e_α is intended to lead to e_β , for example, when e_α is a precondition to e_β).¹⁸ This difference in terms of planning is more obvious in examples like (29).

- (29) a. Marie rejoignit son ami, **puis** lui glissa à l'oreille qu'elle voulait partir.
 'Marie rejoined her friend, then she whispered in his ear that she wanted to leave.'
- b. Marie rejoignit son ami; **un peu plus tard**, elle lui glissa à l'oreille qu'elle voulait partir.

Example (29a) lends itself to an interpretation in which Marie reaches her friend in order to tell him something. But this plan interpretation is suspended when *puis* is replaced with *un peu plus tard* in (25b).¹⁹

The difference in behavior evidenced here should be explained at the rhetorical level. It would probably require in some contexts the use of a new relation of 'Planned-Sequence' (not yet introduced in SDRT), allowed by *puis*, and again, blocked by *un peu plus tard*.

***Puis* and *un peu plus tard* with Result.** Let us now come back to (23), that we repeat here for the sake of readability:

- (23) a. L'acide tomba dans le mélange. Une explosion se produisit.
 b. L'acide tomba dans le mélange. **Puis** une explosion se produisit.
 c. L'acide tomba dans le mélange. **Un peu plus tard** une explosion se produisit.

The different interpretations of (23a) and (23c) on the one hand, and of (23b) on the other hand, have to be accounted for. Assuming that there is most probably some piece of shared knowledge on chemicals implying that D-Permissible-Cause holds between the two constituents representing the two clauses, SDRT non-monotonically concludes Result

¹⁸This at least seems to be true when *un peu plus tard* connects two Passé Simple sentences. As we will note later, things are more complicated when *un peu plus tard* introduces a so-called 'narrative Imparfait'.

¹⁹Or, for that matter, another adverbial indicating an even shorter temporal separation like *immédiatement après* ('immediately after').

with Axiom 12. As was shown in Bras et al. (2001b), *puis* blocks the non-monotonic inference to Result. SDRT can exploit the logical properties of defeasible reasoning in Commonsense Entailment to explain this blocking, if the presence of *puis* implied some fact incompatible with Result. Axiom 28 together with the semantic effects of Strong-Narration A2 is unable to infer any such fact. Hence an additional axiom is needed:

A 34 $(\langle \tau, \alpha, \beta \rangle \wedge \textit{puis}(\beta)) \rightarrow \neg \textit{Result}(\alpha, \beta)$

or

A 35 $(\langle \tau, \alpha, \beta \rangle \wedge \textit{puis}(\beta)) \rightarrow \neg \textit{Cause}(e_\alpha, e_\beta)$

It is possible to choose between these two solutions and retain A34 by observing that the blocking should be on the rhetorical level only. Indeed, it could be the case that the two events described are actually causally connected, even though the text doesn't tell us anything regarding such a connection. So, our intuition that there is a difference of interpretation between (23b) and (23c) is expressed, in SDRT, by the fact that *puis* blocks the rhetorical relation of Result. For *un peu plus tard*, no such constraint is at stake, so the Result relation will be inferred thus accounting for the intuition of a mere 'delayed' result.

***Puis* and *un peu plus tard* with Contrast.** Let us finally examine cases in which a relation of Contrast is expressed:

- (30) a. Il s'en moqua d'ailleurs comme d'une naïveté, **puis** la vanta comme un moyen de contraindre la sottise des petites gens au respect du savoir et de la puissance[...] (Adam, L'enfant d'Austerlitz)
 'He mocked it besides as a naïvety, then praised it as a means to compel the stupidity of ordinary people to the respect of knowledge and power[...]'
- b. Il s'en moqua d'ailleurs comme d'une naïveté; **un peu plus tard** il la vanta comme un moyen [...]
- (31) a. Vaton se tut sous le choc, **puis** bredouilla quelques mots[...] (Malègue, Augustin ou le Maître est là)
 'Vaton went silent under the shock, then he stammered a few words[...]'
- b. Vaton se tut sous le choc; **un peu plus tard**, il bredouilla quelques mots[...]

In these examples SDRT predicts that a rhetorical relation of Contrast holds between the clauses linked by *puis* or *un peu plus tard*, as the required partial structural isomorphism is accompanied by a lexical

opposition of the main predicates (*to mock/to praise, to go silent/to stammer*). These opposed predicates describe actions of a same agent, so that the corresponding events are necessarily temporally disjoint. However, neither *puis* nor *un peu plus tard* are redundant in these examples. They emphasize the separation between the two actions, ordering them temporally. Without *puis* or *un peu plus tard*, the temporal succession reading is lost and incoherent discourses are obtained:

- (32) Il s'en moqua d'ailleurs comme d'une naïveté; ?il la vanta comme un moyen[...]

The incoherence remains if the temporal adverbials are replaced with the explicit Contrast marker *mais* ('but').²⁰

- (33) Il s'en moqua d'ailleurs comme d'une naïveté, ?mais la vanta comme un moyen[...]

This actually confirms SDRT axiom A4: Narration cannot be inferred by default (i.e., without Occasion and without any specific marker like *puis*) when other discourse relations, like Contrast, can be triggered²¹. However, SDRT does not at present explain why such discourses are incoherent. It seems that further semantic constraints on the Contrast relation are needed, requiring some explicit temporal separation where the two events cannot occur simultaneously. Now, what is the difference between (30a) and (30b) or between (31a) and (31b)? According to what has been previously shown, it is only in (30a) and (31b), with *puis*, that Strong-Narration is inferred. In (30b) and (31b) the discourse relation of Weak-Narration will be inferred. So the difference between these examples is of the same type as the one we observed for (24) and (25). As an indication of temporal succession is sufficient to admit incompatible situations, both the examples with *puis* and *un peu plus tard* are acceptable. But at the same time as *puis* triggers a separation between the two events in a relation of Contrast, the absence of significant gap associated with it gives a cohesion that *un peu plus tard* does not give. And as was previously seen, the difference in cohesion may be evidenced by a difference of acceptability between (34) and (35)

- (34) Il s'en moqua, **puis** la vanta. *Entretemps, il avait réfléchi.
'He mocked it, then he praised it. Meanwhile he had thought

²⁰The incoherence may disappear only when the reading is not a narrative one, i.e., if the mocking and the praising are no longer considered as temporally ordered. In this case, the use of the Contrast marker focuses on the co-existence of two different features of the object at stake that can be evaluated at the same time: one negatively (as a naïvety) and the other positively (as a restrictive means).

²¹Notice that with Occasion, we may have both Contrast and Strong-Narration relations without *puis*.

things over.’

- (35) Il s’en moqua et **un peu plus tard** la vanta. Entretemps, il avait réfléchi.

It can be noticed that the temporal interval between the two events is quantified with *un peu plus tard*, and not with *puis*. Two remarks can be made. First, even with a quantification specifying that the interval is short (*peu* means *little*), *un peu plus tard* does not succeed in giving the ‘no-significant-gap’ reading that *puis* gives. Second, even though in many contexts, the ‘no-significant-gap’ constraint imposed by Strong-Narration with *puis* leads to an implicit characterization of this interval, as being rather short, this is by no means necessary. See for instance 36, in which the author felt the need to add a quantification of the interval, using both *puis* and *peu après*.²² This shows that the ‘no-significant-gap’ constraint is not a metric notion, but indeed a conceptual one: no relevant event happened in between.

- (36) Azarius l’entendit qui enjoignait à l’enfant de dormir. **Puis, peu après**, il la vit qui le surveillait, appuyée au chambranle de la porte. (Roy, Bonheur d’occasion)
 ‘Azarius heard her enjoining the child to sleep. Then, a little later, he saw her watching him, leaning against the doorpost.’

3.2 Connecting Passé Simple and Imparfait sentences

Imparfait sentence linked to a Passé Simple sentence with *puis* or *un peu plus tard*. In Bras et al. (2001a), a corpus of discourse pieces in which *puis* connects an Imparfait sentence and a Passé Simple sentence, such as 37, is analyzed:

- (37) Mme Rieux détourna la tête vers la fenêtre. Le docteur se taisait. **Puis** il dit à sa mère de ne pas pleurer, qu’il s’y attendait, mais que c’était quand même difficile. (Camus, La Peste)
 ‘Mme Rieux turned her head away towards the window. The doctor kept (IMP) silent. Then he told (PS) her mother not to cry, that he was expecting it, but that it was difficult nonetheless.’

In (37), besides the Background relation between the constituents representing the first two sentences, there is both a relation of Contrast and a relation of Strong-Narration between the constituent representing *le docteur se taisait* and the one for *il dit à sa mère...* Actually, in all

²²This is a case for which the analysis correctly predicts Strong-Narration, even though *un peu plus tard* is used, illustrating again the inferential priorities between material

implication and non-monotonic conditional.

the examples following the Imparfait *puis* Passé Simple scheme that are found in the corpus, both Strong-Narration and Contrast hold, leading us back to cases of Contrast we have studied above for the Passé Simple. It is shown in Bras et al. (2001a)

that the relation of Contrast is present in all such examples, as it helps to end the durative situation (associated with the Imparfait) to express a Strong-Narration.²³ (37) can be modified by replacing *puis* with *un peu plus tard*:

- (38) Mme Rieux détourna la tête vers la fenêtre. Le docteur se taisait.
Un peu plus tard, il dit à sa mère de ne pas pleurer, qu'il s'y attendait, mais que c'était quand même difficile.

(38) gets a slightly different interpretation. The silence described by *le docteur se taisait* might have been broken by something else than what is described in *il dit à sa mère de ne pas pleurer*. This would be impossible for (37). The discourse relations inferred for (38), namely Contrast and Weak-Narration, correctly account for this. Again, the distinction between *puis* and *un peu plus tard* is the same as the one seen above for the Passé Simple cases with Contrast.

Passé Simple sentence linked to an Imparfait sentence with *puis* or *un peu plus tard*. In Section 2.2 it was shown that two sentences in a sequence Passé Simple - Imparfait without connectives could be linked by three discourse relations: Background, Result or Explanation, if we only consider the possible discourse relations with temporal effects. If we try to link two such sentences with *puis* and *un peu plus tard*, it is obvious that Explanation is not compatible with either *puis* or *un peu plus tard*, as they have opposite temporal effects (precedence vs. succession). In cases of the 'background Imparfait', the standard Imparfaituse, the Imparfait temporally includes some required temporal anchor. In such contexts the behavior of *puis* and *un peu plus tard* is not the same, as shown in (39).²⁴

- (39) a. Marie promet qu'elle allait réparer la voiture. **Un peu plus tard / un quart d'heure plus tard** elle était plongée dans son roman, affalée sur le canapé.
 'Marie promised to go and fix the car. A bit later / a quarter of an hour later, she was-Imparfait immersed in her novel, slumped

²³The way an event may be linked to a state through a relation of Strong-Narration has not classically been studied in SDRT. The difficulties raised by the attachment, and some propositions to resolve them through an adjustment of the FBP structure (cf. Section 2.2) are presented in Bras et al. (2001a).

²⁴See Gosselin (1999) for a similar example where the Imparfait may be paraphrased by *être-IMP en train de V-INF*.

in the sofa.’

- b. Marie promet qu’elle allait réparer la voiture. *Puis elle était plongée dans son roman, affalée sur le canapé.

Un peu plus tard or *un quart d’heure plus tard* can provide the temporal referent the standard Imparfait requires, while *puis* cannot.²⁵ It is shown in Asher et al. (2002) that when relational adverbials are quantified with a durative NP, a time *t* may be introduced, just as with referential adverbials. Pure linking adverbials like *puis* never include a durative NP, and are thus unable to provide such a temporal referent. Without an explicit temporal quantification, relational adverbials such as *plus tard* or *après* come close to *puis*, since no new time referent can be forced in (40), a variant of (39).

- (40) Marie promet qu’elle allait réparer la voiture. ***Plus tard**, elle était plongée dans son roman, affalée sur le canapé.

The so-called ‘narrative Imparfait’ in (41) and (42) also requires a temporal anchor, provided by adverbials of type *NP plus tard/après*, but not by *puis* (cf. chapter 15 for discussion of the Narrative Imparfait).

- (41) a. Pierre déclara d’abord que ce livre ne l’intéressait pas. **Peu après**, il le recommandait chaudement à tous ses amis.
 ‘Pierre first claimed (PS) that he was not interested in this book. A bit later, he recommended (IMP) it heartily to all his friends.’
 b. Pierre déclara d’abord que ce livre ne l’intéressait pas. ***Puis**, il le recommandait chaudement à tous ses amis.

- (42) a. Pour la première fois de sa vie, il ne s’ennuya pas au théâtre et il passa sa nuit avec des filles. **Six mois plus tard**, il se remariait. (Maupassant, *Les bijoux*, quoted by Berthonneau and Kleiber (1999))
 ‘For the first time in his life, he wasn’t (PS) bored at the theater and he spent (PS) his night with girls. Six months later, he remarried (IMP).’
 b. Pour la première fois de sa vie, il ne s’ennuya pas au théâtre et il passa sa nuit avec des filles. ***Puis** il se remariait.

- (43) a. [le commandant (...) se jeta sur l’interphone] et hurla qu’il avait à parler à Mr Chisnutt. **Trois minutes plus tard**, Mr Chisnutt se présentait chez le commandant.
 ‘[The commandant rushed at the intercom] and roared that

²⁵This infelicity is not due to the particular discourse relation involved here, i.e., Contrast. We have seen above that *puis* is compatible with the relation of Contrast.

he had to speak to Mr Chisnutt. Three minutes later, Mr Chisnutt appeared at the commandant's.'

- b. [le commandant (...) se jeta sur l'interphone] et hurla qu'il avait à parler à Mr Chisnutt. ***Puis** Mr Chisnutt se présentait chez le commandant.²⁶

Actually, very rare cases of narrative Imparfait can be found in the corpus, triggered by *puis* (Bras et al., 2001a):

- (44) Un grand silence tomba. – Quand nous reviendrons de la guerre, dit enfin M. Pasquier, je vous raconterai les souvenirs de mon voyage en Afrique. Un voyage mirobolant! Il y eut un nouveau silence. **Puis** on entendait un bruit poignant, un bruit terrible, qui semblait sourdre non d'un être, mais de l'épaisseur de la terre. (Duhamel, Le Combat contre les ombres)
'[...] There was (PS) another silence. Then one heard (IMP) a poignant noise, a terrible noise, which seemed to rise not from a being, but from the depths of the earth.'

Nevertheless, such cases studied in Bras et al. (2001a), are rather marked, and not to be considered as counter-examples.

3.3 Conclusion

Puis and *un peu plus tard* have been compared in order to determine the way they affect the temporal structure and discourse structure of sentences in the Passé Simple and the Imparfait. Both connectives express temporal succession, but *puis* involves a stronger temporal semantics content: $(e_\alpha \supset (post(e_\alpha) \sqcap pre(e_\beta)) \supset e_\beta)$. As far as the discourse structure is concerned, *puis* is a marker of Strong-Narration, involving the notion of telling the 'same story' (topic), whereas *un peu plus tard* blocks Strong-Narration and licences Weak-Narration, involving no more semantic effects than temporal succession. In addition, *puis* blocks Result, while *un peu plus tard* doesn't.

We conclude that a priori temporally equivalent adverbials may have different effects on discourse structure. On the one hand, we see that *puis* is a real discourse relation connective, which is no surprise given its conjunct character. On the other hand, if *un peu plus tard* is not a discourse relation connective, neither is it the purely temporal adverbial

²⁶This example is mentioned here as it is one of the examples used by Molendijk (1990) to show that the narrative Imparfait has the characteristic of being 'prepared', i.e. of coinciding with an implication of a preceding sentence.

Examples such as this one justify our claim that the presence of *un peu plus tard* blocks the interpretation that the events it connects are part of a plan: the validity of this claim is limited to cases in which *un peu plus tard* connects two Passé Simple sentences; it doesn't hold when *un peu plus tard* introduces a 'narrative Imparfait'.

that one could expect, since it is capable of blocking some discourse relations, like Strong-Narration, the usual case of Narration. And this is certainly not an obvious fact for an adverbial primarily indicating temporal succession.

The analysis proposed up to now has been restricted to two representative connectives, and to their interaction with two simple tenses. In what follows, the perspective is slightly different: the study focuses on the way a text written in the Passé Composé may appeal to connectives in order to facilitate the interpretation of its temporal structure. In this perspective, a larger range of connectives will be taken into account.

4 Connectives, Discourse Structure, and the Passé Composé

At this point, we have all the analytical tools we need to re-examine the temporal structure of discourses in the Passé Composé. In chapter 15 above, building on de Swart and Molendijk (2002, to appear), we claimed that the French Passé Composé respects the temporal structure E-R,S of the Reichenbachian perfect. Furthermore, we claimed that the Passé Composé introduces a quantized event e into the discourse representation structure, and a consequent state s , such that $e \supset s$. On the basis of a study of *L'étranger* we concluded that any temporal relation could be established between two sentences in the Passé Composé: we found examples of posteriority, simultaneity/overlap and even temporal inversion. The question that remains to be answered is how the temporal structure of a discourse in the Passé Composé is determined. We claim that the temporal structure is parasitic upon the rhetorical structure of the Passé Composé.

4.1 From Reichenbach to rhetorical structure

In the Reichenbachian view, the non-anaphoric nature of the perfect is the result of its orientation towards the speech time S. In terms of SDRT, we can say that the perfect creates an Elaboration structure in which the speech time S (or more generally: the utterance situation or writing context) provides the topic, and all sentences in the perfect are elaborations of this topic. Typically, several sentences entertain an Elaboration relation with the Topic at hand, which leads to a relation of Continuation between these sentences. If we find a series of sentences in the perfect, which elaborate a particular speech situation, the rhetorical relation between those sentences is the relation of Continuation as exemplified in Figure 6.

Continuation is a purely rhetorical relation, that does not have temporal implications in and of itself (cf. section 2.2 above). The sen-

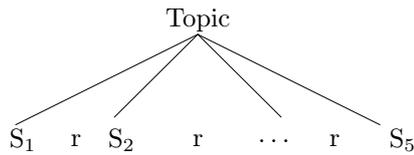


FIGURE 6 Topic, Elaboration, Continuation

tences $S_1 \dots S_n$ in the perfect thus describe a temporally unordered set of events. We can use this discourse semantics to describe the structure of texts like (45) (English) and (46) (French).²⁷

- (45) Here then is a letter. You and I long since agreed that letters are nothing. Yours tell me what I knew already or could well imagine, and they frequently departed from the rule which we had laid down that a letter should consist principally of facts. 'Here are my facts. The weather *has been* incomparable. There *have been* many parties on sea and on land. I leave all reunions which *have been abandoned* to conversation only and for which the host *has made* no plans for entertainment.'
- (46) La bêtise n'est pas mon fort. *J'ai vu* beaucoup d'individus, *j'ai pris* ma part d'entreprises diverses sans les aimer, *j'ai mangé* presque tous les jours, *j'ai touché* à des femmes. 'Stupidity is not my strong point. I have seen many individuals, I have taken part in several activities that I didn't like, I have eaten almost every day, I have touched women.'

The Topic of the Elaboration in (45) is given by the sentence 'Here are the facts'. The series of sentences in the Present Perfect that follows describes Elaborations of this topic. Although the sentences are related by the rhetorical relation of Continuation, this does not in and of itself induce temporal structure. The set of events is described as a temporally unordered set. Similar remarks can be made about (46). The Topic here is *La bêtise n'est pas mon fort*. The series of sentences in the Passé Composé that follows describes Elaborations of this topic, and collects the events in an unordered set. In both cases the Topic is provided by a sentence in the present tense, which confirms the orientation of the

²⁷(45) is a passage from (the English translation of) a letter by Clodia Pulcher to the poet Catull, quoted by Weinrich (1973: 74–75)

in his discussion of the English perfect. (46) contains the opening sentences of Paul Valéry's story *La soirée avec M. Teste*; it is quoted by Weinrich (1973: 77) in his discussion of the French perfect.

perfect towards the speech time.

The relation of Continuation does not induce temporal structure, and we see in (45) and (46) that it does not have to have temporal implications. However, Continuation is not incompatible with temporal relations between the events of the Elaboration, as we have seen earlier in this chapter. Now the English Present Perfect and Dutch *Voltooid Tegenwoordige Tijd* do not allow temporal relations with other events (cf. de Swart and Molendijk, to appear), so we cannot develop temporal structure by means of the Present Perfect or the VTT. The main difference with French then is that we can use the *Passé Composé* to tell a story, because the relation of Continuation between the perfect sentences can get a temporal dimension. Note that temporal structure is not induced by the *Passé Composé* (it is ‘just’ a perfect that introduces a structure of Elaboration), but we know that it does not block temporal structure. Thus we can formulate the discourse semantics of the *Passé Composé* as:

(47) **Rule for the interpretation of the *Passé Composé***

- (i) The *Passé Composé* respects the temporal structure E-R,S
- (ii) The *Passé Composé* introduces a quantized event e into the discourse, and a consequent state s , such that $e \supset s$.
- (iii) A sentence in the *Passé Composé* takes the speech time S (or the utterance situation) as its Topic, and creates an Elaboration structure. The rhetorical relation between two sentences in the *Passé Composé* is Continuation;
- (iv) Any temporal relation is possible between the events e and e' reported by two sentences in the *Passé Composé*.

Clause (47i) states that the *Passé Composé* has the Reichenbachian structure of a perfect. Clause (47ii) states that the *Passé Composé* locates an event e on the time axis. We can call the *Passé Composé* a perfective past tense in the sense that the *Passé Simple* also does this. Clause (47iii) fixes the rhetorical interpretation of the *Passé Composé*. The *Passé Composé* does not induce temporal structure, but it does not block it either, so any temporal relation between two sentences in the *Passé Composé* is permitted (47iv).

4.2 How to tell a story in the *Passé Composé*

The *Passé Composé* is not responsible for the temporal relations between the events. The analysis of *L'étranger* shows that the temporal structure of a story told in the *Passé Composé* is driven by lexical semantics and pragmatic (rhetorical) knowledge. Telling a story

involves putting a sequence of events in a temporal order. We distinguish three basic cases: posteriority, overlap (simultaneity/inclusion) and temporal inversion. In chapter 15, we showed that any of these three relations can be found between two sentences in the Passé Composé. Our main emphasis will be on posteriority, for that is the essential characteristic of narration. Camus obtains a temporal structure of posteriority by exploiting temporal connectives, the lexical semantics of verbs and adverbials expressing time going by, the existence of temporal presuppositions and implications, and rhetorical structure.

Connectives Camus frequently uses connectives like *puis*, *ensuite*, *un moment après*, as was already observed by (Weinrich, 1973, 268). (48) is a representative example, but we could have given many others:

- (48) J'ai dit au concierge, sans me retourner vers lui: "Il y a longtemps que vous êtes là?" *Immédiatement* il a répondu: "Cinq ans" – comme s'il avait attendu depuis toujours ma demande. *Ensuite* il a beaucoup bavardé. On l'aurait bien étonné en lui disant qu'il finirait concierge à l'asile de Marengo. Il avait soixante-quatre ans et il était parisien. *A ce moment* je l'ai interrompu: "Ah! Vous n'êtes pas d'ici?" *Puis* je me suis souvenu qu'avant de me conduire chez le directeur, il m'avait parlé de maman. (p. 15–16)
- 'Without turning around, I said (PC) to the caretaker, 'Have you been here long?' Straight away he answered (PC), 'Five years' – as if he'd been waiting (PQP) for me to ask all the time.

After that he chatted (PC) a lot. He'd have been very surprised if anyone had told him he'd end up as the caretaker of the Marengo home. He was (IMP) sixty-four and he came (IMP) from Paris. At that point I interrupted (PC) him, 'Oh, you're not from round here?' Then I remembered (PC) that he'd talked to me about mother.'

If the Passé Composé is not inherently a narrative tense, the frequent use of connectives can be explained by the need to indicate posteriority at the discourse level. In § 3 above, it has been argued that *puis* is a rhetorical marker that introduces a relation of Narration (cf. axiom A28 above). The rhetorical relation of Narration obligatorily leads to succession in time, so the use of connectives like *puis*, *ensuite*, *un moment après*, etc. moves the story forward.

Time goes by *L'étranger* is full of expressions that mark the passing of time. We find both adverbial (49) and verbal (50) expressions that indicate a period of time going by:

- (49) Nous sommes restés *un long moment* ainsi. (p. 20)
We sat (PC) like this for quite some time.
- (50) La journée *a tourné encore un peu*. Au-dessus des toits, le ciel est devenu rougeâtre et, avec *le soir naissant*, les rues se sont animées. (p. 39)
'The day advanced (PC) a bit more. Above the roofs the sky began (PC) to redden and with evening approaching, the streets came (PC) to life.'

Moreover, Camus frequently refers to the location of the events on the time axis by means of indications of light or heat. Thus, the day of the funeral is structured in the following way:

- (51) Le jour glissait sur la verrière. (...) Quand je suis sorti, le jour était complètement levé. (...) Le soleil était monté un peu plus dans le ciel: il commençait à chauffer mes pieds. (...) Le ciel était déjà plein de soleil. (...) J'étais surpris de la rapidité avec laquelle le soleil montait dans le ciel. (p. 22-28)
'The dawn was creeping (IMP) up over the glass roof. (...) When I went (PC) outside, it was (IMP) broad daylight. (...) The sun had risen (PQP) a little higher in the sky: it was beginning (IMP) to warm my feet up. (...) The sun was (IMP) already high in the sky. (...) I was (IMP) surprised how rapidly the sun was climbing (IMP) in the sky.'

Presuppositions and implications Vet (1980) establishes a distinction between transitional and non-transitional verbs. A transitional verb describes the transition between two states, and leads to pre-states and post-states. In *L'étranger*, we find many references to the spatial location of the result state:

- (52) Je me suis levé sans rien dire et *il m'a précédé vers la porte*. *Dans l'escalier*, il m'a expliqué (...). (p. 12)
'I stood up (PC) without saying anything and he led (PC) the way to the door. On our way downstairs he explained (PC) (...).'

An action like *précéder quelqu'un vers la porte* (52) implies that one comes closer to the door. The adverbial *dans l'escalier* refers to a location on the other side of the door. Given that movement takes time (cf. Asher et al. 1995), one can interpret *il m'a expliqué* as later in time. The notion of temporal presupposition is not restricted to movement verbs, as the example in (53) illustrates:

- (53) La garde est entrée à ce moment. Le soir était tombé brusquement. Très vite, la nuit s'était épaissie au-dessus de la verrière.

Le concierge *a tourné* le commutateur et *j'ai été aveuglé* par l'éclaboussement soudain de la lumière. (p. 17)
 'The nurse came (PC) in at that point. Night had fallen (PQP) suddenly. The sky had darkened (PQP) rapidly above the glass roof. The caretaker turned (PC) the light-switch and I was (PC) blinded by the sudden blaze of light.'

(54) shows that we can also exploit presuppositions of transitional verbs to create a structure of temporal succession:

(54) Il a consulté un dossier et m'a dit: (...). *J'ai dit*: (...). Il *a ajouté*: (...). Le directeur m'a *encore* parlé. (p. 11)
 'He consulted (PC) a file and told (PC) me, (...) I said (PC), (...) He added (PC), (...) The warden spoke (PC) to me again.'

Both *ajouter* and *encore* in (54) presuppose that something has been said before, so there must be successive speaking events. Just like in the movement cases, the presupposition has a temporal dimension that is exploited to create narrative structure.

Rhetorical structure The Passé Composé is a neutral, non-anaphoric tense, and not an inherently narrative tense like the Passé Simple. This implies that the Passé Composé does not give rise to Narration as a default rhetorical relation. However, sentences in the Passé Composé can be related by "strong" Narration, if the predicate Occasion holds between the two clauses, cf. A5 in § 2 above. The idea behind Occasion is that a sequence of sentences reporting a series of events is coherent only if this sequence reflects a 'natural' order of events (cf. Moens (1987); Glasbey (1993); Asher (1996)). World knowledge allows us to see a natural order in sequences of the type question-answer, offer-acceptance/rejection, and in more complex scripts and scenarios. Once we have derived Occasion, we can derive a temporal order of succession. Examples where Camus exploits Occasion are given in (55), (56):

(55) *Je lui ai fait remarquer* qu'en somme il était un pensionnaire. *Il m'a dit* que non. (p. 16)
 'I pointed (PC) out to him that even so he was (IMP) still an inmate. He said (PC) no.'

(56) *Il m'a offert* alors d'apporter une tasse de café au lait. Comme j'aime beaucoup le café au lait, *j'ai accepté* et (...). (p. 17)
 'He then offered (PC) to bring me a cup of white coffee. I'm (PR) very fond of white coffee, so I accepted (PC) and (...).'

At a more global level, we can use the notion of script in a similar way. Scripts and scenarios have been defined as stereotypical sequences of

actions. (57) illustrates the script of getting up in the morning, where we have a ‘typical’ series of events in a natural order: waking up, getting up, shaving, etc. The sentences are locally connected by Occasion:

- (57) En me *réveillant*, j’ai compris pourquoi mon patron avait l’air mécontent quand je lui ai demandé mes deux jours de congé: c’est aujourd’hui samedi. (...) J’ai eu de la peine à *me lever* parce que j’étais fatigué de ma journée d’hier. Pendant que je me *rasais*, je me suis demandé ce que j’allais faire et j’ai décidé d’aller me baigner. (p. 34)
 ‘When I woke up, I understood (PC) why my boss seemed (IMP) unhappy when I asked (PC) him for my two days off: today’s a Saturday. (...) I had (PC) trouble getting up because I was (IMP) tired from the day before. While I was shaving (IMP), I wondered (PC) what to do with myself and I decided to go for a swim.’

In sum, temporal relations of posteriority are established by connectives, the lexical semantics of verbs and adverbs, and world knowledge about the ‘natural’ order of events. The fact that the Passé Composé is not anaphoric, and is not an inherently narrative tense like the Passé Simple is not a barrier for narrative use, because there are other means of creating narration.

Telling a story does not only rely on posteriority relations, it is equally important to describe simultaneity and inverse temporal order. Although indications of the time of the day are frequent in *L’étranger*, they are exclusively used to make time move forward, and they never indicate going back in time. The same is true for transitional verbs, where presuppositions could potentially be exploited to create inverse temporal order, but we found no examples. However, Camus exploits world knowledge and rhetorical structure to express simultaneity and inverse temporal order. We pointed out in chapter 15 that the Passé Composé allows inverse temporal order, as opposed to the Passé Simple. The relevant example is repeated here as (58):

- (58) *J’ai pris* l’autobus à deux heures. Il faisait très chaud. *J’ai mangé* au restaurant, chez Céleste, comme d’habitude. Ils avaient tous beaucoup de peine pour moi et Céleste m’a dit: “On n’a qu’une mère”. Quand je suis parti, ils m’ont accompagné à la porte. J’étais un peu étourdi parce qu’il a fallu que je monte chez Emmanuel pour lui emprunter une cravate noire et un brassard. Il a perdu son oncle, il y a quelques mois.
J’ai couru pour ne pas manquer le départ. (...) (p. 10)
 ‘I caught (PC) the two o’clock bus. It was (IMP) very hot. I ate (PC) at Céleste’s restaurant, as usual. They all felt (IMP) very

sorry for me and Céleste told (PC) me, "There's no one like a mother" . When I left (PC), they came (PC) to the door with me. I was (IMP) in a bit of a daze because I had (PC) to go up to Emmanuel's place to borrow a black tie and armband. He lost(PC) his uncle, a few months ago.

I had to run for the bus.' (p. 10)

We infer from (58) that lunch takes place before the protagonist takes the bus, because he had to run for the bus. We posit a relation of Occasion between the event of running, and the event of taking the bus, and capture the structure of the sequence with the following axiom on Inverse Occasion, that we add to the system developed above:

A 36 $\langle \tau, \alpha, \beta \rangle \wedge Occasion(\beta, \alpha) > Narration(\beta, \alpha)$

Given that Narration implies temporal succession, a relation of Occasion between β and α implies inverse temporal Order. Narration implies that no 'relevant' event intervenes between the two events e_β and e_α . This allows the story to go back in time, without going back to a 'random' earlier time. It also implies that *j'ai mangé au restaurant* cannot take place in between the running and the taking the bus. It cannot be set later, because the 'habit' referred to involves Meursault's lunch with his friends, in the town where he works, rather than the village where the bus takes him (and where his mother's home is situated). Thus, we have to locate the lunch before the bus ride. The rhetorical relation of Continuation between the two sentences *j'ai pris l'autobus à deux heures* and *j'ai mangé au restaurant comme d'habitude* creates a weak rhetorical structure that is nevertheless sufficient to maintain the coherence of the fragment, because both sentences are elaborations of the same topic (the day of the mother's death).

Inverse Occasion is a somewhat strange rhetorical relation from a conceptual point of view: we do not usually tell stories in the reverse order in which they occur. However, examples like (58) suggest that we may exploit the non-anaphoric nature of the Passé Composé and our knowledge of scripts and 'natural' orders of events to construct the intended rhetorical structure after all. The fact that the English Simple Past is quite free in the construction of temporal structure, but blocks Inverse Occasion suggests that the question whether a tense does or does not disallow Inverse Occasion could be the criterion for characterizing it as a narrative tense or not.

4.3 Conclusion

We conclude that the French Passé Composé is well on its way to become a perfective past tense, but it is not quite there yet. Its orientation

towards the speech time makes it a non-anaphoric tense, which means that it is not in essence a narrative tense. This confirms the traditional view that the Reichenbachian schema E-R,S reflects: that the perfect is not meant for narration. Although the Passé Composé is not blocked in narrative contexts, it can only be used to tell a story if there is a clear deictic dimension. In spoken language, the connection with the speech time is always available. In written language, the connection with the speech time is available in the context of a diary, a newspaper, etc. It need not come as a surprise to learn – much later in *L'étranger* – that we are reading the protagonist's memories of the events preceding his arrest and trial. We claim that the Passé Composé remains a perfect as long as it maintains its clear deictic character. It is not until we start finding the Passé Composé as the standard tense of written, narrative discourse that it can really be characterized as a perfective simple past. The diachronic development of the French language has not yet reached that stage.

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