

Tense in Texts

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What is the meaning of a tense? There are various ways in which one might try to answer this question – and what way one will think appropriate tends to be determined by one's conception of linguistic meaning in general. Thus for instance someone who believes that a theory of meaning should analyze the truth conditions of the sentences of the language under study will see the problem as that of describing what contributions the various tenses make to the truth conditions of the sentences in which they occur. Such has been the attitude towards the semantic analysis of tense favoured by those working within the framework of model-theoretic semantics, an approach which has been largely inspired by the conviction that a theory of meaning must be a theory of conditions of truth. In their attempts to explicate the semantic significance of the tense markers model-theoreticians have moreover tended to make the assumption, common in model-theoretic analyses of natural language, that truth conditions can be articulated in abstraction from the verbal contexts in which sentences typically occur when they are actually used.

This, it seems, is the wrong way to tackle this particular problem. For the significance of the tenses lies primarily in the temporal relations which they establish between the sentences in which they occur and the sentences which precede those in the texts or discourses in which those sentences figure. A first systematic attempt to come to grips with this aspect of temporal reference is, we believe, that of Kamp (1979). The bulk of that paper was devoted to the relations between temporal structures of, respectively, instants and events; but its last section proposed an application of the earlier developed theory of events to an analysis of the contrast between the French *passé simple* and *imparfait*, a contrast that has puzzled many students of French Grammar, and which truth conditional semantics is particularly ill-equipped to illuminate. The central idea of that application was that the main function of these tenses, and in fact of all tenses generally, is to signal to the recipient of the sentence in which the tense occurs how he should incorporate the information the sentence brings him into the representation which he has already formed of the preceding sections of the text or discourse of which the sentence is part.

These representations, which the recipient of a discourse is made to construct in response to the verbal inputs he receives has the form of an event

structure of the kind described in the earlier parts of (1979), and the theory developed there explains how such structures might semantically relate to the real time structure of the actual world, whether the latter be conceived as a larger and richer event structure in its own right, or – a conception more familiar from e.g. the model theory for tense logic – as a linear structure of temporal instants.

In the present paper we shall ignore the problem of how representations relate to the actual world (but see e.g. Kamp (1979), (1980), (1981)). But we wish to study somewhat more closely the internal temporal structure which the representations must possess in and of themselves, and the procedures by which they are constructed.

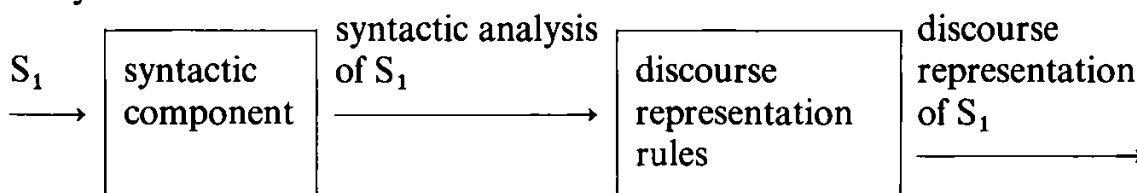
Let's assume we have a text with n sentences S_1, \dots, S_n .

This text is analyzed in the following way:

The first sentence is parsed in the syntactic component.

The output is a labelled tree. This labelled tree constitutes the input to the rules that derive the corresponding discourse representation.

The syntactic structure determines the discourse representation. Schematically:



When this representation K_1 has been formed, the second sentence is parsed and its syntactic structure used to incorporate the information it carries into the already constructed representation. This yields an expanded representation K_2 . K_2 will then be expanded in turn to a larger representation K_3 through incorporation of the third sentence; and so on until all n sentences of the discourse have been dealt with.

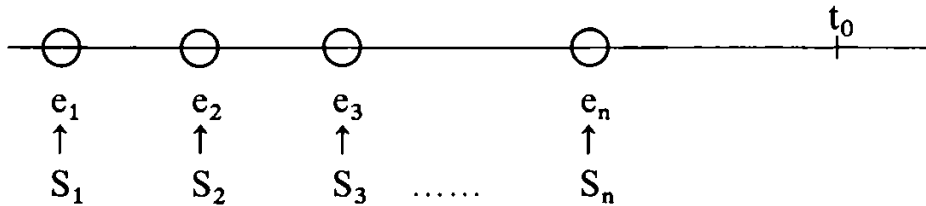
There are important differences between this approach and versions of Montague Grammar which make use of some intermediate formal language (such as intensional logic) to provide 'logical forms' or 'semantic representations' for the natural language expressions which they endeavour to describe.

To bring out the difference between the two theories let us consider a concrete example:

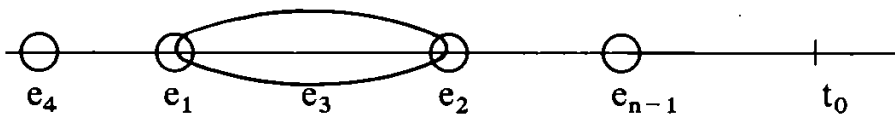
- (1) Vite docteur, dépêchez-vous. Mon mari a pris deux cachets d'aspirine, il a avalé sa lotion contre les aigreurs d'estomac, il s'est mis un suppositoire contre la grippe, il a pris un comprimé à cause de son asthme, il s'est mis des gouttes dans le nez, et puis il a allumé une cigarette. Et alors, il y a eu une énorme explosion.

A succession of sentences whose main verb is in the passé simple or in the passé composé is normally understood as reporting events whose relative temporal order is isomorphic to the order in which the sentences reporting

them follow each other in the text. Or, more simply, the order of the sentences corresponds to the order of the events.



There is little that traditional model-theoretic semantics has to say about the truth value of a discourse consisting of several sentences. The implicit view appears to be that such a sentence-sequence is true iff each of the sentences in it is true. According to this view (1) would be true provided there are past events e_1, \dots, e_n of the kind specified by S_1, \dots, S_n , irrespective of how they are ordered in time. The event structure could for instance look like this:



The only relevant temporal condition here is that each e_i lies before the speech point.

Clearly this is not right. The discourse conveys a definite temporal order among the events it reports and unless this was in fact the order in which these events actually occurred the discourse will not be countenanced as true. The only way out of this predicament is to incorporate the relevant intersentential temporal relations into whatever it is that determines the truth conditions of the discourse as a whole. In discourse representation theory the problem is solved in the following manner. The principle that a sentence in the passé simple introduces a new event, and that this event follows the last event already introduced, is incorporated into the rules for discourse representation construction. These rules insure that the discourse events that are introduced into the representation as the sentences are processed are temporally related in the representation just as their real counterparts must be ordered in actuality. These temporal relations in the representation then become an integral part of the truth conditions of the discourse if we define truth as Kamp (1979) proposes: A discourse D with DRS K is *true* iff it is possible to embed K homomorphically into the real world, i.e. to associate with (in particular) the discourse events of K real events that meet all conditions, including those pertaining to temporal order, which K specifies of the corresponding discourse events.

By itself the case of a text in the passé simple is probably not very convincing. You may feel that one could easily build into Montague Grammar the feature that the order of the sentences in a narrative text reflects the order of the events in the real (or fictional) world. However consider the contrast between passé simple and imparfait.

Compare the two sentences:

(2a) Marie téléphona.

(2b) Marie téléphonait.

It is extremely difficult to formulate a difference in truth conditions between (2a) and (2b) if the two sentences are taken in isolation. It is as difficult as the difference between 'Bill worked' and 'Bill was working'. The choice of the tense form depends on the function that the sentence in which it occurs has in a text. In other words, the factors which determine the use of imparfait and passé simple can only be explained at the level of discourse representation. One context that brings out a clear difference between (2a) and (2b) is a temporal clause beginning with *quand*.

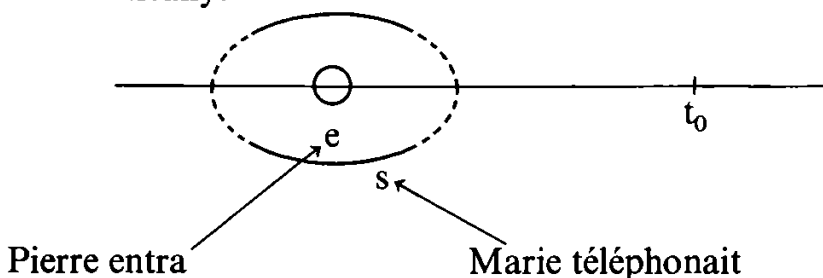
(2a') Quand Pierre entra, Marie téléphona.

(2b') Quand Pierre entra, Marie téléphonait.

In this context the difference is so obvious that it has been described in every traditional school grammar. In (2a') the two events are consecutive, Marie starts telephoning after Pierre has come in. In (2b') Marie is already talking on the telephone when Pierre comes in. The rule for constructing the discourse representation for a sentence in the imparfait can be described informally as follows:

- (i) the sentence in the imparfait introduces a new discourse state *s*.
- (ii) this state *s* lies before the speech point
- (iii) *s* contains the last event *e* (introduced by a sentence in the passé simple)

Schematically:



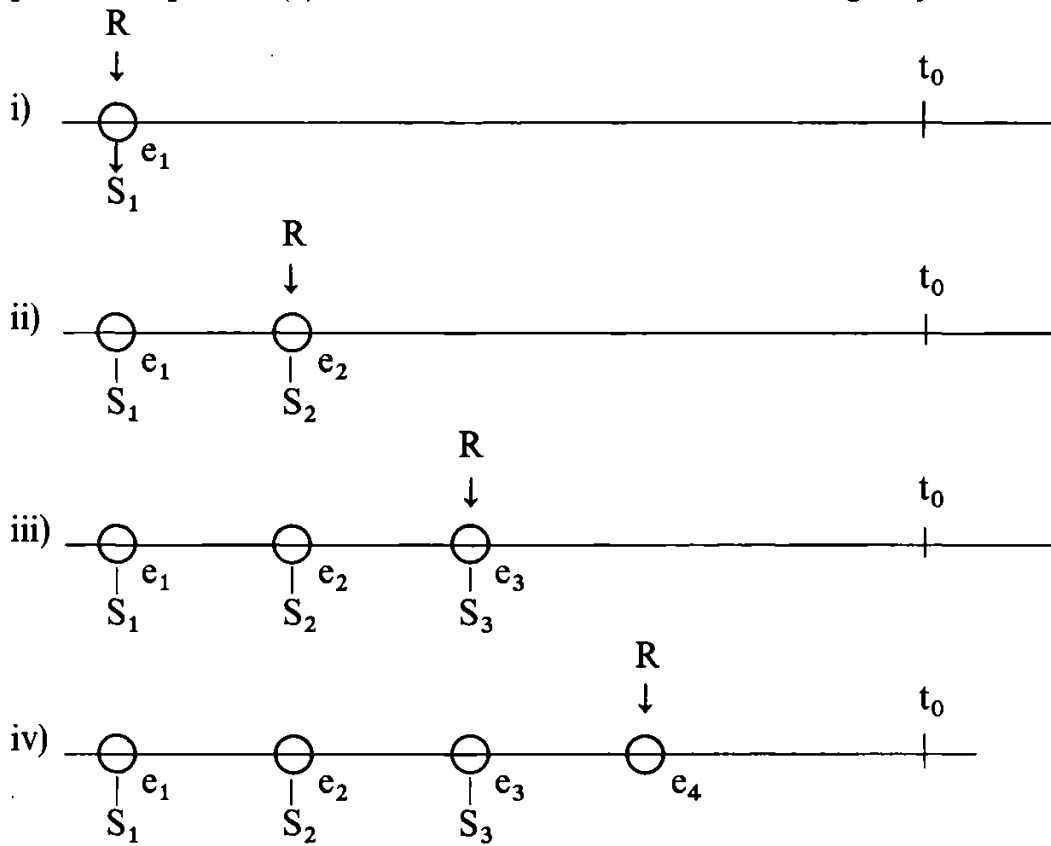
Evidently the decisive temporal feature of (2a') and (2b') is not the temporal conjunction but the choice of the tenses. In fact, if we drop the conjunction *quand*, the temporal relations are unaffected. In other words the two complex sentences (2a') and (2b') denote the same temporal structures as the sequences of two sentences (2a'') and (2b'') respectively.

(2a'') Pierre entra. Marie téléphona.

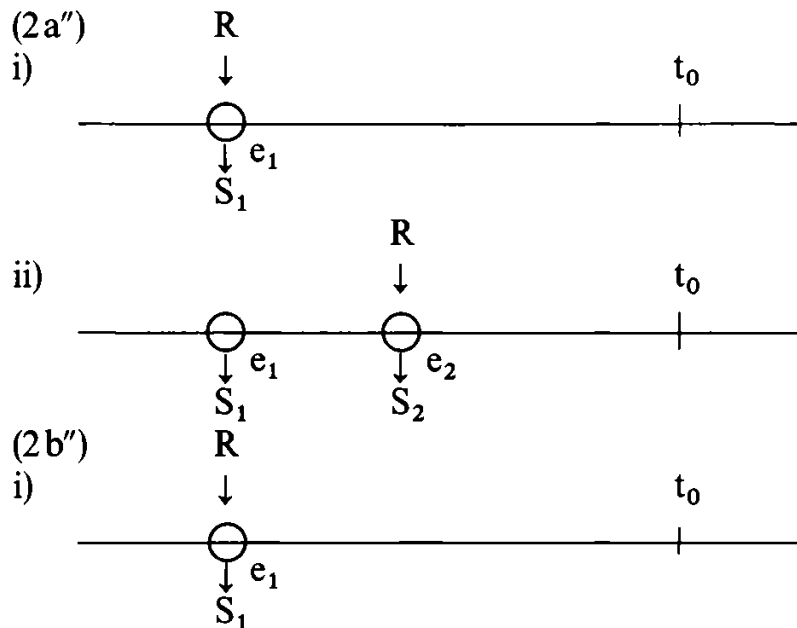
(2b'') Pierre entra. Marie téléphonait.

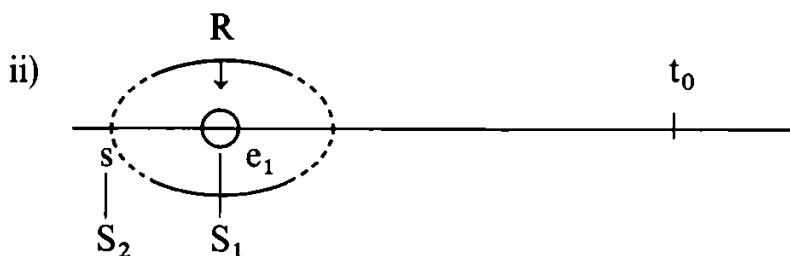
The rules for the construction of discourse representations handle the occurrence of tense forms in complex sentences in much the same way as they are handled in a sequence of sentences. A precise formulation of these rules must refer to the intermediate stage the representation has reached at the point where the rule is to be applied. At each such stage a particular time or event in the DRS is marked as *reference point*. Normally this reference point gets trans-

ferred to the next event that gets to be introduced into the representation by a passé simple sentence. Thus the successive stages of the representation for the past tense part of (1) can be schematized in the following way:



We already noted that the rule for the imparfait differs from that for the p.s. The imparfait rule stipulates that the state of affairs reported by the imparfait sentence covers a period which includes the reference point. Thus the representation constructions for (2a'') and (2b'') take the following forms:





The term ‘reference point’ has been used before in the analysis of tense and aspect; so much so in fact that it might be thought foolish to use it once again. However, our choice of terminology has been intentional. The term ‘reference point’ was, to our knowledge, first introduced by Reichenbach (1947, p. 289 to 290) who observed among other things that:

“We see that we need three time points even for the distinction of tenses which, in a superficial consideration, seem to concern only two time points. The difficulties which grammar books have in explaining the meanings of the different tenses originate from the fact that they do not recognize the three-place structure of the time determination given in the tenses.

We thus come to the following tables, in which the initials ‘E’, ‘R’ and ‘S’ stand, respectively, for ‘point of the event’, ‘point of reference’, and ‘point of speech’, and in which the direction of time is represented as the direction of the line from left to right:

Past Perfect I had seen John	Simple Past I saw John	Present Perfect I have seen John
$\frac{\quad}{\quad}$ E R S	$\frac{\quad}{\quad}$ R, E S	$\frac{\quad}{\quad}$ E S, R
Present I see John	Simple Future I shall see John	Future Perfect I shall have seen John”
$\frac{\quad}{\quad}$ S, R, E	$\frac{\quad}{\quad}$ S, R E	$\frac{\quad}{\quad}$ S E R

These principles should be seen, we believe, as insights about the function of tenses in discourse: The reference points about which Reichenbach speaks are established by context; often the relevant contextual factors are contained in the antecedent discourse, and these are the cases with which we are concerned here.

To see the connection between our notion of ‘reference point’ and Reichenbach’s consider his analysis of the past perfect. To see this analysis in its proper perspective we must look at the role which English sentences in the past perfect – or French sentences in the plus-que-parfait – play in the discourses in which they occur. Consider the following example:

- (3) Dimanche dernier, M. Jacquet inaugurerait le 18^e émetteur du réseau français de télévision. Mais *trois jours plus tôt* le même Jacquet *avait décidé* la suppression de la tribune libre des journalistes parlementaires.
(L’Express, 16-12-57, Klum, p. 258)

The role of the plus-que-parfait sentence in this discourse is typical: The event it introduces must be understood as lying *in the past* of the event or time which is marked as reference point at the stage when the sentence is processed. Thus the rule for dealing with such a sentence is roughly as follows:

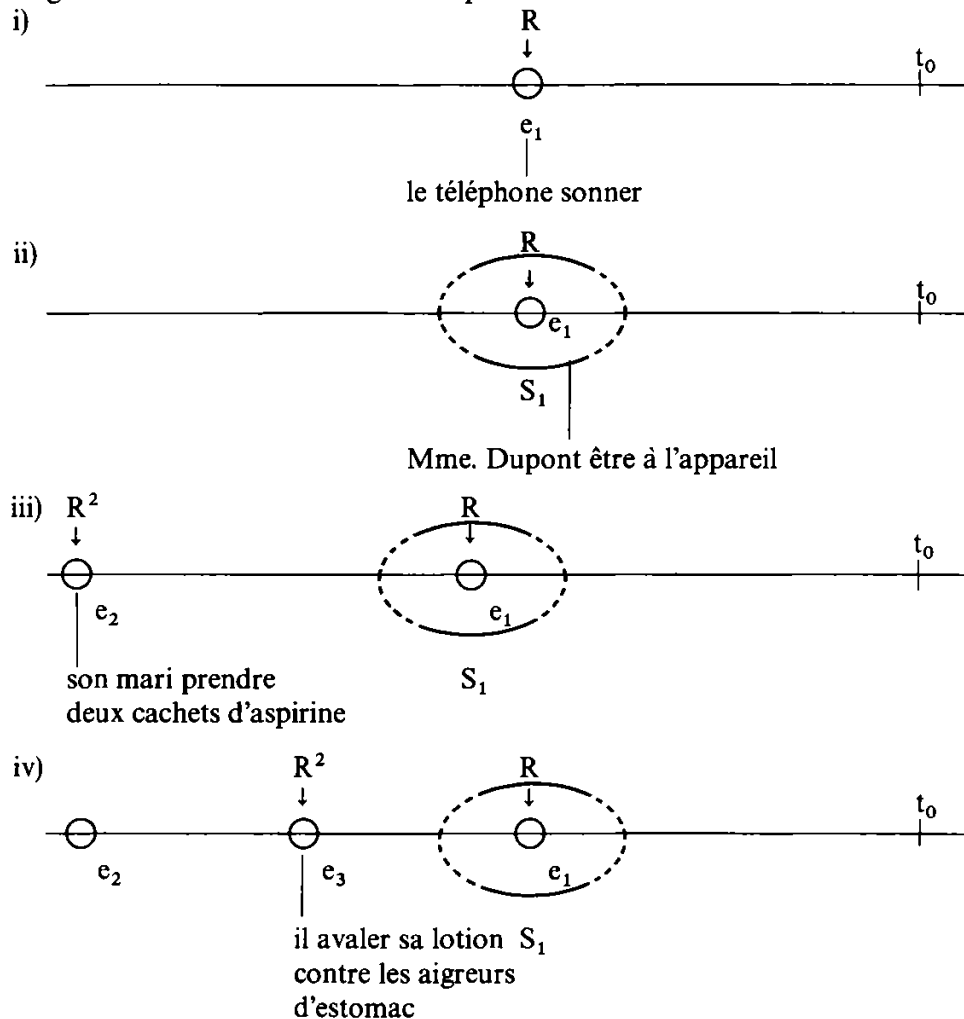
Introduce a new event in the past of the reference point.

Moreover the reference point itself remains unchanged (as in the case when the treated sentence is in the imparfait¹).

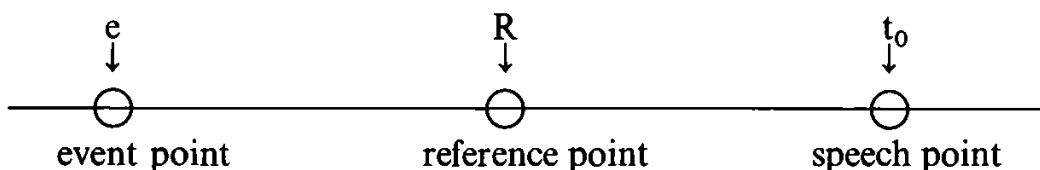
¹ Plus-que-parfait sentences may set up subsidiary reference points; these come into play when a given plus-que-parfait sentence is followed by others which are also in the plus-que-parfait – as in the following example:

(1') Le téléphone sonna. C'était Madame Dupont à l'appareil. Son mari avait pris deux cachets d'aspirine, il avait avalé sa lotion contre les aigreurs d'estomac, il s'était mis un suppositoire contre la grippe, il avait pris un comprimé à cause de son asthme, il s'était mis des gouttes dans le nez, et puis il avait allumé une cigarette. Et alors il y avait eu une énorme explosion. Le docteur réfléchit un moment; puis il lui conseilla d'appeler les pompiers.

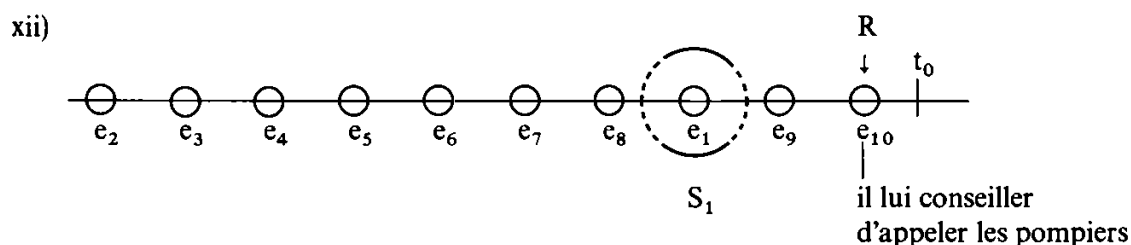
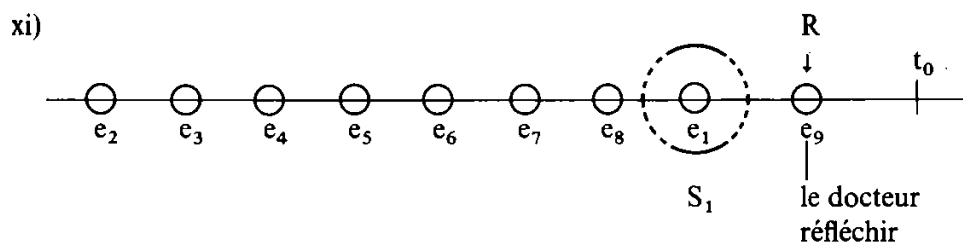
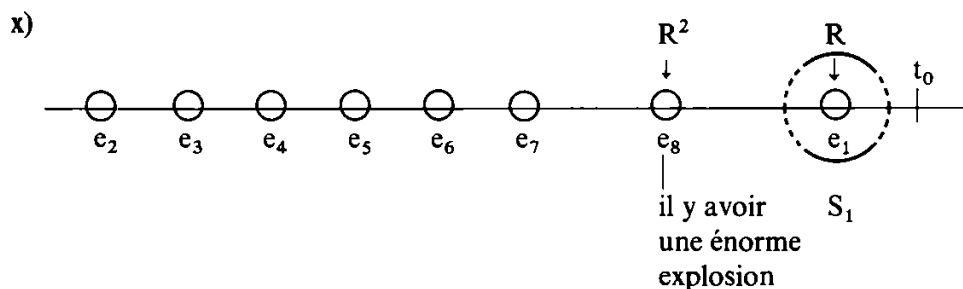
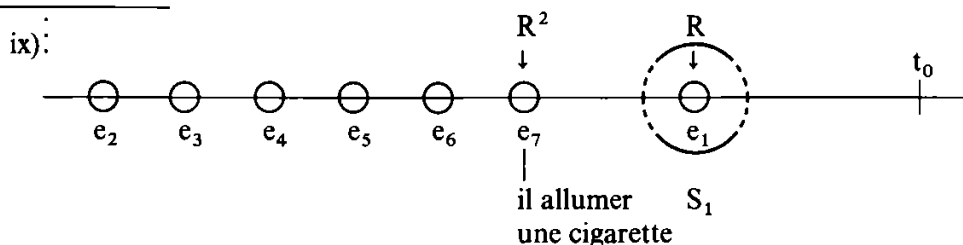
Here the part that is in the plus-que-parfait gives rise to a section of the DRS which lies entirely in the past of the main reference point; as this section is constructed the secondary reference point gets transferred step by step in the same way as the primary reference point gets transferred during the construction of the DRS for (1'). Once the text returns to the passé simple, however, it is once again the primary reference point that serves as temporal orientation. Some of the stages in the DRS construction are represented below:



Not only is it obligatory to interpret a plus-que-parfait sentence as referring to a time that is antecedent to the reference point; conversely, if the narrator wants to refer to a time that precedes the reference point he *must* use the plus-que-parfait. Thus the plus-que-parfait is the one and only French tense (and the past perfect the only tense in English) which gives rise to the configuration



exactly as Reichenbach would have it.²



For further discussion of the plus-que-parfait see Rohrer (1982).

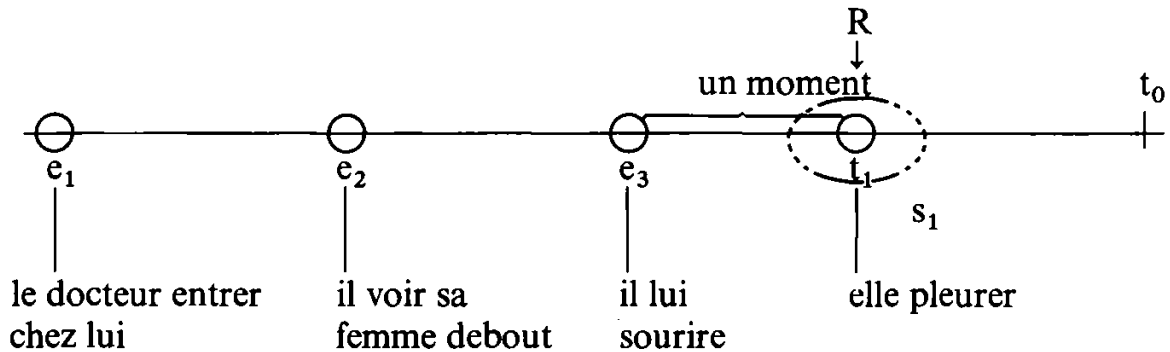
² i) Once a secondary reference point has been established it is possible to use a tense form other than the past perfect (vz. simple past in English; p. s., p. c. or imparfait in French) to refer to times subsequent to that secondary reference point but antecedent to the main reference point:
E.g.:

An imparfait sentence does not always describe a condition prevalent at the time indicated by the reference point. This is so, in particular, when the sentence contains its own adverb of temporal location. The text

(4) Le docteur entra chez lui et vit sa femme debout.

Il lui sourit. Un moment après elle pleurait.

for instance gives rise to a DRS of the following form:



Indeed, when an imparfait sentence is to refer to a time other than the reference point it must contain a temporal adverbial (which may take the form of a single adverb, a prepositional phrase or a subordinate clause) to indicate that time. In this regard imparfait sentences differ from sentences in the passé simple or passé composé. A sentence of the latter type may also contain an adverbial to give a more definite indication of the temporal location of the reported event than could be inferred from the context alone in the absence of the adverbial.

- (a) Mais à cette époque la situation presque désespérée des Américains justifiait tous les sacrifices de la France. L'année précédente, les forces combinées des Français et des Américains avaient subi un échec devant Savannah: les Anglais prenaient Charleston et Cornwallis battait Gates à Gamden. [Pollitzer, *Beaumarchais*, p. 172 (quoted from A. Klum (1961) p. 257)]

Note however that this phenomenon is compatible with our analysis of both imparfait and plus-que-parfait in so far as the events or states introduced by such sentences as the last one of (a) are subsequent to the secondary reference point (even if they are antecedent to the main reference point). The simple past or imparfait seem acceptable in such contexts precisely because attention is temporarily shifted from the main to the secondary reference point.

- ii) In Rohrer (1982) it is noted that only the plus-que-parfait can fulfill the function described here. It has sometimes been thought that the passé antérieur functions similarly; but this is a mistake. Consider for instance the following pair (from Rohrer (1982)):

- (b) Cunégonde s'évanouit. Son père $\left. \begin{array}{l} \text{avait} \\ \text{*eut} \end{array} \right\}$ chassé

Candide du château à grands coups de pied dans le derrière.

The passé antérieur cannot express anteriority with respect to the reference point which itself lies in the past of the speech point. A sentence in the passé antérieur can denote only an event that is posterior to the reference point, as the next two sentences illustrate:

- (c) Claude le [le révolver] découvrit aussitôt. Dès qu'il l'eut pris – preuve de paix – un homme habillé sortit de leur case: Xa. Tous deux allèrent aux charettes.

(Malraux, *Voie royale*, p. 143)

- (d) Enfin elle referma ma porte. Quand elle eut verrouillé la sienne, je regagnai, dans le cabinet de toilette, mon poste d'écoute.

(Mauriac, *Noeud de vipères*, p. 282)

Moreover such an adverbial indication seems required in cases where the context fails to provide any reference point at all, e. g. when the sentence in question is the very first of the discourse of which it is part.³ But where a reference point already exists a *passé simple* sentence may introduce a new reference point, not coincident with the one that serves as orientation for the event the sentence introduces into the DRS.

Occasionally an *imparfait* sentence without temporal adverbs can also be understood as referring to a time that appears to be distinct from the reference time. Hinrichs (1981) draws attention to sequences such as:

(5) Jean tourna l'interrupteur. La lumière éclatante l'éblouissait.

Here the time referred to by the second sentence is naturally understood to immediately follow the event of turning the switch. Presumably such an interpretation is possible because the event reported by the first sentence is naturally understood to yield a new state of affairs which temporally follows the event itself. In such cases it would seem possible to focus, without further explicit verbal indication, directly on this subsequent period, i. e. to understand this period, rather than the event which initiates it, as the new reference point. Such a further temporal advance of the reference point is possible especially (perhaps exclusively) when the event can be understood as a change, or the immediate cause of a change, in the prevailing conditions.

The possibility of conceptualizing such events as the initial parts of the states they bring about relates to that of using the *passé simple* inchoatively, as in

(6) Il fut président

to mean "he became president". Here the *passé simple* construction is derivative from the more fundamental use of the verb phrase "être président" as a stative. In the *passé simple* the VP plays the role of a non-stative, reporting the event which is the transition from non-satisfaction to satisfaction of the stative VP.

We already noticed that the formulation of the construction rule for the *passé simple* is not quite correct. Here are some examples which indicate the need for modification.

³ It is not uncommon for a story to begin with a sentence in *passé simple* or *imparfait* without any adverbial that indicates a temporal location. This, however, is a stylistic device, which exploits the presupposition that the reader should already have a temporal reference point to which the event or state presented by the sentence can be anchored. By playing on this presupposition the author suggests that he and his reader share a common background that allows for so simple a beginning of the story, and this evokes in his audience a sense of 'being part to the narrative' that tends to be absent when the opening line is explicit about the locus (temporal and otherwise) where the narrative takes place. Compare for instance the following two opening lines:

(e) Nous étions à l'étude, quand le Proviseur entra, suivi d'un *nouveau* habillé en bourgeois et d'un garçon de classe qui portait un grand pupitre.
(Flaubert, *Madame Bovary*, p. 1)

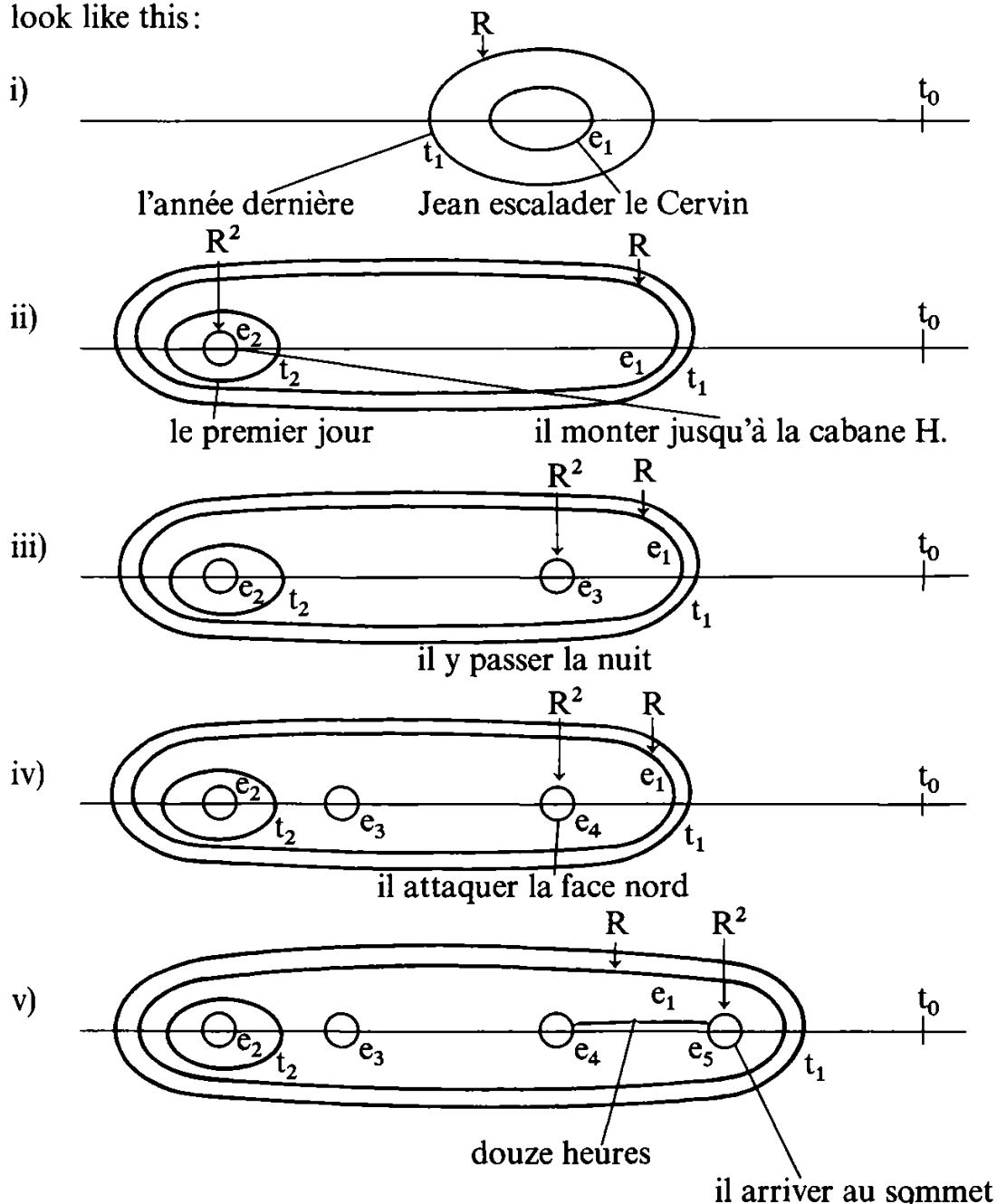
(f) Le 15 mai 1796 le général Bonaparte fit son entrée dans Milan à la tête de cette jeune armée qui venait de passer le pont de Lodi, et d'apprendre au monde qu'après tant de siècles César et Alexandre avaient un successeur.
(Stendhal, *La Chartreuse de Parme*, p. 1)

(7) Marie chanta et Pierre l'accompagna au piano.

In this example the two events are not consecutive. There is one event which can be viewed as consisting of two parallel events. The second exception consists of a paragraph where the first sentence in the *passé simple* mentions an event which can be understood as segmented into a number of separable episodes, as in the following text:

(8) L'année dernière Jean escalada le Cervin. Le premier jour il monta jusqu'à la cabane H. Il y passa la nuit. Ensuite il attaqua la face nord. Douze heures plus tard il arriva au sommet.

The construction of the DRS for (8) involves the introduction of secondary reference points – just as are needed to deal with extended passages in the *plus-que-parfait* (cf. footnote 1). Thus the successive construction stages will look like this:



A third type of discourse that shows the inadequacy of our earlier formulation of the *passé simple* rules is exemplified by the following discourse fragment:

(9) L'été de cette année-là vit plusieurs changements dans la vie de nos héros.
François épousa Adèle, Jean-Louis partit pour le Brésil et Paul s'acheta une maison à la campagne.

Here the events introduced by S_2, \dots, S_5 are naturally understood as constitutive of, and thus as temporally included in, the event introduced by S_1 . But the temporal relationships between them are left unresolved.

Indeed (9) would seem a perfectly acceptable report even if as a matter of fact e_3 , say, happened before e_2 .

This last example is particularly important because it indicates that only a very weak statement of the *passé simple* rule will do for all possible cases, viz.

iii') the event introduced by the next p.s. sentence *may not be encoded in the DRS* as entirely preceding the event or time which at that stage of the representation construction functions as reference point.

In many cases we can of course infer more about the temporal relations between the new event and the previous reference point than this version of the principle conveys. We take it, however, that in all these cases further contextual information is required for the additional inference. (A very common situation, instantiated by a number of the examples that led us to our original, unacceptably strong, formulation of the rule is that where the successive *passé simple* sentences report actions or events that involve one and the same person, and where it is common knowledge that a single person can not (or could hardly) be involved in more than one of these at the same time. Such incompatibility implies that the events must be understood to have been consecutive rather than simultaneous; and it would thus be desirable to encode in the DRS the correct temporal order that holds between them. Since principle (iii') forbids encoding the event that is introduced later as preceding the earlier introduced one in real time conversational maxims should have yielded for such cases the convention which we do in fact find in past tense narrative, viz. that the later event is to be mentioned after the earlier one.)

Different Types of Anaphoric and Indexical Expressions

Reference points are not only needed to describe the function of p.s. and imparfait. They are required for a number of other phenomena as well. Prominent among these is the behaviour of several types of indexical and anaphoric temporal expressions.

Temporal indexicality is, it turns out, a much more complex matter than the existing studies of such indexicals as the pronouns *I* and *you*, and such adverbs as *now* and *here*, suggest. In fact the recorded views on these matters (Montague (1974), Lewis (1972), Kamp (1971), Kaplan (1977), (1978)) apply strictly to only a very small number of the indexicals that have been discussed in the literature,

to wit the first and second person personal pronouns. These two pronouns always denote the speaker and the addressee of the utterance in which they occur. Indeed they form, it seems to us, a category of their own which we shall denote with roman I. In French this category only comprises the two particles (I) *je, tu*.

A second group is constituted by the temporal adverbs:

(II) *hier, aujourd'hui, demain*⁴

These adverbs usually refer to the day which precedes, includes, or follows the day which contains the point of utterance. However they can also denote the day preceding, including or following the reference point. We give one example for each adverb.

(10) H. C. ne fit qu'une rapide toilette du soir. Le sommeil le terrassa à peine eut-il éteint la petite lampe de la table de nuit, mais il sursauta encore une fois en se souvenant que quelqu'un était mort *avant-hier* dans son lit.

(Th. Mann, *Montagne magique*, p. 31)

(11) La nuit, les grands cris des bateaux invisibles, la rumeur qui montait de la mer et de la foule qui s'écoulait, cette heure que Rieux connaissait bien et aimait autrefois lui paraissait *aujourd'hui* oppressante à cause de tout ce qu'il savait.

(Camus, *La peste*, p. 59)

Of course this use of *aujourd'hui*, which we just mentioned, must be clearly distinguished from cases like the following, where *aujourd'hui* refers to the time when the author wrote and published his novel and not to the time when the protagonist of the novel lived.

(12) Les élégances, qui seraient *aujourd'hui* des misères pour les pareilles de Rosanette, l'éblouirent; et il admira tout.

(Flaubert, *Ed. Sent.* p. 117)

(III) Third we have adverbs such as *maintenant, dans 2 heures, jusqu'ici, en ce moment*. Like the adverbs in group II these can denote only a time that relates to the speech point, or else one that is similarly related to the reference point. There is however an important difference between the expressions of group II and those of group III, which is illustrated by the following example:

(13) Malgré ses succès de l'administration, le caractère désagréable que revêtaient *maintenant* les formalités obligea la préfecture à écarter les parents de la cérémonie.

(Camus, *La Peste*, p. 162)

Here it would not do to replace *maintenant* by *aujourd'hui*. Contexts which admit *aujourd'hui* in combination with a past tense on the other hand do also admit *maintenant*; and this is true generally: if a text allows an adverb of group II to denote a time by relating it to a past reference point, it will also allow an

⁴ Further examples would be: *cette année, l'année dernière, l'année prochaine*.

adverb from group III to denote in this manner; but the converse of this principle fails. We will come back to this difference later on.

(IV) Fourth there are adverbs such as *deux jours après*, *un an plus tard*, *à ce moment*, *alors*. These adverbs are anaphoric expressions par excellence.

The principles according to which the context determines the relevant denotations for such adverbs appear to be very similar to those which govern the reference of anaphoric third person personal pronouns.

Finally there are the adverbs

(V) *depuis deux jours*, *à partir de deux heures*.

These differ from indexicals such as *maintenant* on the one hand and anaphoric expressions such as *deux heures avant* on the other. It is not clear, however, if they can be regarded as forming a unified category.

Temporal Perspective: The Difference between III and V

Let us begin with a familiar example:

(14) Kissinger arriva au Caire le 6 juillet.

{ Deux jours après }
 { *Dans deux jours } il partit pour Jérusalem

Here *deux jours après* is acceptable but *dans deux jours* is not. *Deux jours après* is context-dependent in that the tense to which it refers must be determined by the context of its use: the time *t* it denotes must be two days after some other time *t'* which context provides. But any contextually salient time or event can serve as *t'*, and there are no restrictions on tense forms with which the expression can combine.

Dans deux jours differs from *deux jours après* in both respects: First it can only denote a time two days after either the speech point or the reference point. Second it always signifies a looking forward in time from the anchor point (i. e. speech point or reference point) and for that reason is compatible only with those tense forms which convey a similar forward looking temporal orientation. Thus we can say:

(15) Kissinger arriva au Caire le 6 juillet.

Il { partait }
 { partirait } pour Jérusalem dans deux jours
 { allait partir }

as well as

(16) Kissinger arriva au Caire le 6 juillet.

Il { partait }
 { partirait } pour Jérusalem deux jours après
 { allait partir }

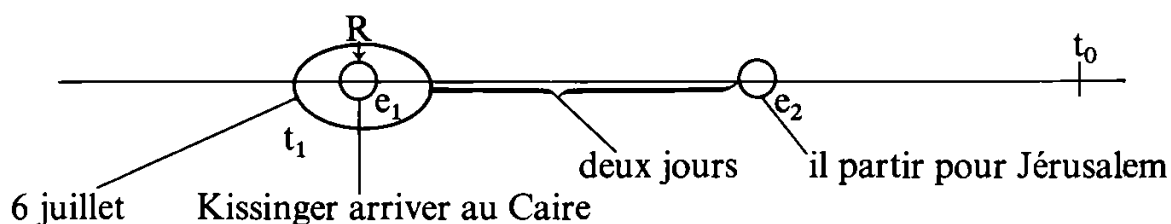
The tense forms in (15) and (16) indicate that the event of Kissinger's departure is presented from the *perspective* of the reference point introduced by the first sentence, i. e. his arrival on July 6th. In (14) on the contrary, both

events are presented from the perspective of the speech point. The tenses in (15) and (16) all function as ‘futures of the past’ – just like the corresponding ‘present tense’ forms can function as ‘future tenses’, i. e. can be used to describe events in the future of the speech point:

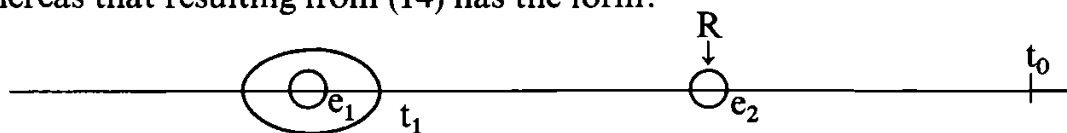
- (17) Kissinger $\left. \begin{array}{l} \text{part} \\ \text{partira} \\ \text{va partir} \end{array} \right\}$ pour Jérusalem dans deux jours

Sentences containing such ‘past future’ tenses are like those in the plus-que-parfait in that they do not alter the reference point (although they, too, may establish secondary reference points).

Thus the DRS resulting from (15) has the form:



whereas that resulting from (14) has the form:



That the reference point does get transferred in the latter case but not in the former we can see by adding an imparfait sentence, e. g.

- (18) Il était déjà très fatigué.

to both (14) and (15). It is clear that in the case of (14) this conveys that Kissinger was tired at the time of his departure for Jerusalem, whereas in the case of (15) it says that he was tired at the time of his arrival in Cairo.

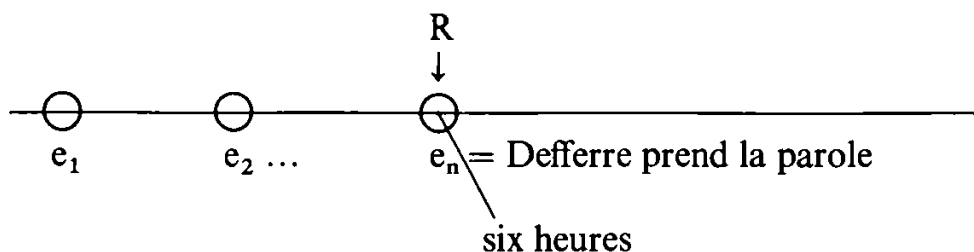
The difference between *dans deux heures* and *deux heures après* is paralleled by that between the adverb *maintenant* and *à ce moment-ci*.

(I just want to mention – en passant – that all treatments of *now* and *then* by philosophers and logicians are hopelessly inadequate for the description of the behaviour of these words in natural language.)

Suppose you have a text where a journalist describes the debate about the ‘nationalisations’ in the French parliament. It could run as follows:

- (19) Mercredi dernier la chambre discuta les nationalisations. D’abord M. exposa le point de vue du gouvernement. Il fut ensuite attaqué par M. Monnory. Puis suivirent les députés X, Y, Z. Finalement à 6 heures M. Defferre prit la parole.

According to our theory this text would induce the following temporal structure:



Clearly the reference point is six o'clock, the moment when Defferre begins to speak. If we want to refer to this point with an indexical or anaphoric expression, which expression should we choose? How would one continue the text? Would you say

(20) A ce moment il n'y avait plus que 25 personnes dans la salle.

or would you prefer

(21) Maintenant il n'y avait plus que 25 personnes dans la salle.

You can try the same text in English or German. Would you choose *jetzt* or *zu diesem Zeitpunkt*? If both seem to be correct, what difference can you see?

Our answer is that you can use both, but that there is an important intuitive difference. If you use *à ce moment* then the temporal perspective remains throughout the complete text that of the utterance time: each event is presented as a separate unit seen from a later vantage point.

If the author uses *maintenant* then the perspective shifts towards the reference point of the last sentence in the p.s. The author then tries to give the impression that the situation is viewed from that temporal angle, from the position of someone who could have been attending the debate. You will never find *maintenant* in a newspaper article which reports a sequence of events in a purely factual, detached manner. It is only when the author takes the temporal perspective of the past, that sentences with *maintenant*, *dans une heure*, *jusqu'ici* show up.

Our example is of course clumsy. A good author prepares shifts of perspective with much greater skill, as the reader may verify by looking at the few real examples below, which should provide more convincing illustrations of our claim.⁵

(22) Rieux se leva, son visage était *maintenant* dans l'ombre.

(Camus, *La Peste*, p. 119)

(23) Flavières faillit braquer ses jumelles, mais son voisin remua d'un air excédé; il baissa la tête, glissa ses jumelles dans sa poche. Il était sûr, *maintenant*, de la reconnaître n'importe où.

(Boileau-Narcejac, *Sueurs froides*, p. 30)

In these examples there is always a switch from p.s. to imp. We have not found a single example with *maintenant* and p.s. With *à ce moment* on the other hand p.s. can occur without any restrictions:

⁵ Let me add a note of caution. *Maintenant* doesn't always have a temporal meaning. There is also an 'argumentative' use. Even within the temporal meaning one can distinguish further subcases. Therefore one has to be very careful in the choice of examples.

- (24) Elle le prit par les oreilles, et le baisa sur le front. A ce moment, les danses s'arrêtèrent; et, à la place du chef d'orchestre, parut un beau jeune homme,
(Flaubert, Ed. Sent., p. 73)

In order to prevent a possible misunderstanding we should point out that shift of the temporal perspective does not mean that the sentence containing *maintenant* should be taken as indirect discourse or reported speech (discours indirect libre), although these are among the contexts in which the adverb can occur. Genuine uses of indirect discourse and reported speech in which *maintenant* plays its part are the following passages from Flaubert's *Education Sentimentale*.

- (25) Et, Frédéric ayant répondu qu'il se trouvait un peu gêné, *maintenant*, l'autre eut un mauvais sourire.
(Flaubert, Ed. sent., p. 142)
- (26) Puis elle parlait de sa santé, et lui apprenait que M. Roque venait *maintenant* chez elle.
(Flaubert, Ed. Sent., p. 155)

Personal Perspective or the Perspective of the Protagonist(s)

aujourd'hui versus *maintenant*

In the case of *maintenant*, as we just saw, the temporal perspective is switched to the reference point. This switch is not sufficient to explain the use of *aujourd'hui* or *demain* in a past context. Consider the following example

- (27) Le capomafia alla tranquillement au lit à minuit. Il ne se doutait pas qu'il se couchait sur une bombe qui exploserait {*demain à 6 heures, dans six heures, 6 heures plus tard}.

In this context *demain* seems not to be acceptable. The reason we think is this: the capomafia does not have the information expressed in the relative clause. Therefore it is not possible to state this bit of information in a way that would approximate the words the capomafia would have used at the time in question. It seems in fact that where *demain*, *aujourd'hui*, *hier* are accompanied by past tense they always form part of reported speech:

- (28) Ensuite, Arnoux parla d'une cuisson importante que l'on devait finir *aujourd'hui*, à sa fabrique. Il voulait la voir. Le train partait dans une heure.
(Flaubert, Ed. Sent., p. 127)
- (29) Jamais Frédéric n'avait été plus loin du mariage. D'ailleurs, Mlle Roque lui semblait une petite personne assez ridicule. Quelle différence avec une femme comme Mme Dambreuse! Un bien autre avenir lui était réservé! Il en avait la certitude *aujourd'hui*;
(Flaubert, Ed. Sent., p. 350)

This last example is very instructive. The first two sentences can still be understood as expressing the point of view of the author. But from the third

sentence onwards we clearly have the represented thoughts of Frédéric. (Notice in this connection the exclamation marks.)

In order to handle such cases, we introduce an additional factor: the *personal perspective*. This personal perspective is necessary for the description of represented speech. It is important to know whether the last sentence in the following text represents the daydreams and hopes of the protagonist Frédéric, or whether the author makes some predictions about what will happen in the future.

(30) Avant de partir en vacances, il eut l'idée d'un pique-nique, ... Il s'y montra gai. Mme Arnoux était maintenant près de sa mère, à Chartres. Mais il la retrouverait bientôt, et finirait par être son amant.

(Flaubert, Ed. Sent., p. 87)

If one has read the whole novel one knows that these sentences express Frédéric's hopes and desires. He never becomes the lover of Mme Arnoux.

Certain passages however contain explicit clues which betray the author's intention to represent the thoughts of one of his characters rather than his own; the occurrence of an adverb of group IV constitutes one such clue. It is for this reason that, as we already saw, the last sentence of (29) can only be interpreted as a report of the propositional attitude of Frédéric, whereas its predecessors were still equivocal in this regard.

Of course it is not always obvious where the personal perspective is located. Some authors, it seems, consciously use perspectival equivocation as a stylistic device. We quote again from L'Ed. Sent.:

(31) Frédéric s'excusa, il ne savait pas danser.

Anyone who reads this passage will agree that it is quite unclear whether Flaubert simply offers his own explanation of why Frédéric declined the invitation to dance, or whether Frédéric said: je ne sais pas danser.

There are many questions relating to the difference between author's perspective and perspective of the protagonist which must await further study. One concerns the means by which the narrator can make explicit from whose perspective the presented content is to be seen; the use of such adverbs as *aujourd'hui* is one of them, and the explicit mention of the protagonist's propositional attitude is another. But there may well be others which we have so far failed to note. Another question is how, and how often, an author may switch between different perspectives. A third problem is how one could describe, in perceptive detail, the various sensations of distance or involvement which the author can produce in his audience by a judicious exploitation of the possibilities of perspectival modulation.

A last question pertains to the identity of what we have indicated here as the 'protagonist'. In the few examples of 'erlebte Rede' displayed above it is clear who the intended protagonist is. But this is not always so. Sometimes there is no particular character among the populace of the narrative's world which can be identified as the intended harbourer of the reported speech. Thus the following passage from Thomas Mann's *Zauberberg*

- (32) Sie hatten seit *gestern* vormittag nicht mehr über ihr *heutiges* Vorhaben gesprochen, und auch *jetzt* gingen sie in schweigendem Einverständnis.
(Th. Mann, *Der Zauberberg*, p. 248)

is difficult to read as the thought of either one of the two relevant protagonists, Hans Castorp and Joachim Ziemsen. Rather one is led to think of the 'protagonist' here either as some 'common conscience' of the two participants, or else perhaps as an anonymous observer whom one imagines to have been on the scene, and subject to the same epistemological limitations as the characters he is supposed to have been watching. While we have little to say about these questions at the present time we intend to address them in the near future, and we hope that the general framework within which we have operated will be as fruitful in the pursuit of those problems as we have found it to be in connection with the issues with which we have tried to deal here. We also hope that by investigating these further problems we may eventually succeed in making some systematic contribution, however modest, to the many complex and subtle problems that belong to the provinces of stylistics and literary theory, and which the students of these fields have, not without reason, been inclined to regard as entirely beyond the reach of the formal approaches towards linguistics of which our own theory is a direct descendant.

Summary

Let us summarize the most important points.

- (1) We presented a system that can handle temporal relations in texts.
- (2) The system treats temporal relations in complex sentences according to the same rules as it treats temporal relations in a sequence of sentences.
- (3) The difference between p. s., p. c. on the one hand and imparfait on the other is explained within texts. A p. s. sentence and an imparfait sentence may have the same truth value in isolation and yet make different contributions to the truth conditions of the texts in which they occur.
- (4) The concept of a (temporal) 'reference point' is defined in terms of its role in the processing of texts. Through this definition it is possible to arrive at a new interpretation of Reichenbach's views concerning the tenses of natural language.
- (5) This notion of reference point makes it possible to arrive at a more refined classification of anaphoric and indexical temporal adverbs. We must, it turns out, distinguish at least four different types.
- (6) Some of the distinctions between some of these four categories involve the notion of the *temporal perspective*. Modes of verbal presentation may differ in respect of the perspective from which they present the information they provide. The perspective may be either from the point of speech or from a temporal reference point that has been established by antecedent discourse.

- (7) In order to distinguish between the function of *aujourd'hui* in contrast to *maintenant* it is necessary to introduce a personal perspective or the perspective of the protagonist(s). This perspective is, we believe, also what distinguishes reported speech (erlebte Rede, discours indirect libre) from direct and indirect discourse.
- (8) By studying texts we might make some new friends in the department of literature.

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