Aktionsart and temporal relations in Dutch texts

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0. Introduction

In this paper I will be concerned with the question to what extent the linguistic information provided by aspect and Aktionsart contributes to an understanding of interclausal temporal relations in Dutch texts.[1] As my point of departure I will take a recent proposal on the connection of Aktionsart and temporal relations that has been formulated for English by Hinrichs (1986). In section 1 I will present the principal claims of his proposal. In section 2 I will reformulate Hinrichs' rules in terms of the features [±telic] (for Aktionsart) and [±perfective] (for aspect). This analysis will bring to light, in section 3, that a considerable number of Dutch cases cannot be explained by rules for temporal interpretation that are based solely on the semantic contribution of aspect and Aktionsart. Moreover, exceptions to such rules that are not language specific are readily available as well, as will be illustrated in section 4. In the final section of the paper I will show that the pragmatic knowledge of non-temporal relations that is needed to determine the temporal ordering in these so-called exceptional cases is also needed if one is to arrive at a coherent interpretation in those cases that are correctly predicted by Aktionsart based rules for the temporal interpretation of texts. Therefore, I will argue that, in the absence of explicit temporal markers, temporal relations are always inferred from (non-temporal) coherence relations.

1. Hinrichs (1986): Aktionsart-based rules for temporal interpretation

For the representation of interclausal temporal relations Reichenbach's (1947) sentence level description of the meaning of the tenses in terms of E, S and R (*Point of Event, Point of Speech, Point of Reference*) has often been used as a starting-point. Specifically, in these studies the interclausal temporal relations are assumed to follow from the permanence or forward movement of the reference point.[2] Reichenbach (1947) himself does not allow movement of R: he claims that R should be the same for all the clauses of a text (*the permanence of the reference point*), unless there is

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[1] I would like to thank Frank van Eynde and Theo Janssen for useful comments, and Mike Hannay for checking the English.

[2] In this paper I will use the notion of reference point as a formalization of the intuitive notion 'narrative now' (cf. Dry 1983).

an adverbial that explicitly triggers the movement of the reference point (*the positional use of the reference point*). For sequences of simple past and past perfect tense forms such as (1) (Reichenbach's example), the principle can explain our intuition that the event in (a) precedes the event in (b). This can be inferred on the basis of the semantics of the past perfect (E - R - S) and the simple past (E,R - S), together with the principle of the permanent R.

(1)   (a) I had mailed the letter (b) when John came and (c) told me the news.

    (a) E_1 ---- R_1 ---- S
    (b) R_2,E_2 -- S
    (c) R_3,E_3 -- S

However, it is not reflected in Reichenbach's representation of (1) that the events presented in (b) and (c) are temporally sequential. Indeed, because of the permanence of the reference point John's coming and his telling the news are situated at the same point in time. Thus, the sentences (2) and (3) would get the same representation in Reichenbach's system, while in fact only our understanding of (3) seems to be adequately represented by the diagram below.
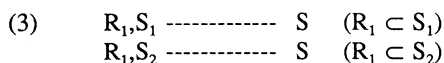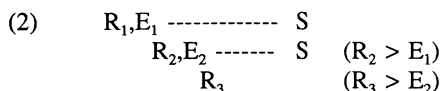
(2)   (a) She married and (b) got pregnant.
(3)   (a) She had long blond hair and (b) wore sunglasses.

(2)/(3)   (a) E_1,R_1 ---- S
            (b) E_2,R_2 ---- S

Although Reichenbach (1947) did not explicitly treat interclausal temporal relations between simple past sequences, researchers working in (or inspired by) the framework of *Discourse Representation Theory* have extended his analysis to cover differences such as between (2) and (3) (Kamp & Rohrer 1983; Partee 1984; Hinrichs 1986). In the approach of these authors the reference point moves forward in some cases, but is permanent in others. As this distinction is not dependent on tense - both (2) and (3) contain simple past tense forms - other information must be taken into account. According to the DRT-researchers it is Aktionsart, that is defined in terms of the four classes introduced by Vendler (1967) (i.e. *states, activities, accomplishments*, and *achievements*) and conceived as a syntactic category, that - in the absence of temporal adverbials - determines the behaviour of the reference point. The connection between these Vendlerian classes and the position of the point of reference is defined as in the following quotation of Hinrichs (1986:81):

> The reference point of a discourse can be shifted by [...] the Aktionsart of a main clause; accomplishments and achievements introduce new reference points, while states, activities and events described in the progressive do not.

In the terminology of Vendler (1967), the clauses in (2) represent *accomplishments/achievements* and the clauses in (3) represent *states*. Thus, Hinrichs treats the difference between temporal sequence such as in (2) and temporal overlap such as in (3) as a *semantic* one, that could be graphically represented as in the following diagrams[3]:

(2) R_1, E_1 ------------- S
            R_2, E_2 ------- S $(R_2 > E_1)$
                R_3 $(R_3 > E_2)$

(3) R_1, S_1 ------------- S $(R_1 \subset S_1)$
        R_1, S_2 ------------- S $(R_1 \subset S_2)$

     To make clear why and in exactly which cases the rules formulated by Hinrichs (1986) for English make wrong predictions for Dutch, the DRT proposal needs to be clarified on some points. First, the issue of which semantic properties contribute to an understanding of interclausal temporal relations is obscured rather than clarified by using the four Vendler classes; moreover, it gives rise to redundancy (section 2.1). Second, the contribution of Aktionsart (telicity) must be clearly distinguished from the role of aspect (perfectivity) (section 2.2).

2. A reformulation of Hinrichs (1986)

2.1. Aktionsart: [±telic]. The way in which Hinrichs uses the Vendler quadripartition (as a bipartition) suggests that telicity is the crucial factor in determining the position of the reference point: this is the property that distinguishes *states* and *activities* from *accomplishments* and *achievements*.

     A proposition is [+ telic] if it describes an event as having a natural starting point and endpoint; the event is presented as being bounded both to the left and to the right. As a consequence, telic propositions potentially describe a change from one state into another, i.e. the state before the event ($state_{init}$) is different from the state after the event ($state_{final}$). By way of example, the event expressed by the proposition /write a letter/ describes a situation that is the transition from one state ($state_{init}$: there is no letter) to another state ($state_{final}$: there is a letter). Atelic propositions such as /write/, /think/, /have blue eyes/ or /be a man/, however different their typical duration may be, have in common that in the absence of additional linguistic markers

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[3]   I leave aside the details of his analysis as well as the subtle difference between the approach of Hinrichs (1986; Partee 1984) on the one hand and the one of Kamp & Rohrer (1983), DRT in the strict sense, on the other. The point I want to make does not depend upon either of these.

or context they do not refer to the initial and final boundary of the events; they do not describe a (potential) change of state. The distinction between [- telic] and [+ telic] propositions can therefore be graphically represented as follows (cf. Vet 1980; Moens & Steedman 1988).

(4)   [- telic]:   ///////////state$_i$//////////////   no change of state

       [+ telic]:   ///state$_{init}$ | event | state$_{final}$/// potential change of state

2.2. Aspect: [±perfective]. On the one hand Hinrichs claims, albeit implicitly, that the Aktionsart property of telicity determines interclausal relations; on the other hand he makes an exception for sentences containing a progressive verb form. This indicates that not only Aktionsart but also aspect is relevant for the determination of interclausal temporal relations. In fact, telicity alone is not the crucial property triggering forward movement of R. In 2.1 I defined telicity as 'potential change of state'. I used the word 'potential' because whether or not the change of state has to be understood as having actually occurred (and, consequently, whether or not the point of reference has to be understood as shifted) is dependent on the aspectual value of the tense form (in languages that have grammaticalized forms of aspect) or on contextual information (in languages such as Dutch). What is needed for a sequence interpretation is not reference to a potential endpoint (telicity), but rather the indication that a terminal point has been reached, i.e. perfectivity. Although the Aktionsart property of telicity and the aspectual value of perfectivity are to some extent interrelated, they cannot be equated (Comrie 1976:Ch.2; Dahl 1981; Declerck 1991:121).

Following Van Eynde (1992), the distinction between perfective and imperfective aspect could be represented as a different relation between the Reichenbachian notions E and R. In the case of imperfectivity, as expressed by the English progressive for instance, R is included in E; the speaker focuses on an 'internal portion' of the event (cf. Comrie 1976). Although telic propositions that are presented in sentences containing a [- perfective] verb form such as the English progressive still imply that the event has a natural endpoint - Aktionsart is a property of the basic, tenseless proposition that cannot be changed by the aspectual value of the tensed proposition -, this endpoint remains 'out of sight' and, in any case, it is not claimed to have been reached. Perfectivity on the other hand implies an external view of the event as a whole, i.e. including its starting point and endpoint. Combining (telic) Aktionsart and aspect, we get the following representations.

(5) [+ telic] & [+ perfective]: $\text{state}_{\text{init}}$ | event | $\text{state}_{\text{fin}}$
     (e.g. *He wrote a letter*)[4]   \\ /
                                                            R

     [+ telic] & [- perfective]: $\text{state}_{\text{init}}$ | event | $\text{state}_{\text{fin}}$
     (e.g. *He was writing a letter*) |
                                                              R

2.3 Reformulating Hinrichs (1986). As should be evident from Hinrichs' statement cited in section 1, not in all cases is the distinction between simple and progressive tenses in English the crucial factor in determining the position of R_i relative to R_{i-1}. Specifically, in the case of [- telic] propositions (Hinrichs' *states* and *activities*), the reference point remains constant, irrespective of the presence or absence of a progressive verb form in the sentence. Therefore, in terms of the two parameters [±telic] (for Aktionsart) and [±perfective] (for aspect) defined above, Hinrichs' proposal can be rewritten as the following three rules.[5]

(6) *(i) If Aktionsart S_i is [- telic], then $R_i = R_{i-1}$*
     (ii) If Aktionsart S_i is [+ telic] & Aspect S_i is [- perfective], then $R_i = R_{i-1}$
     (iii) If Aktionsart S_i is [+ telic] & Aspect S_i is [+ perfective], then $R_i > R_{i-1}$

It is important to recognize that *rules (i)-(iii)* in (6) are nothing more (or less) than a reformulation of the original proposal of Hinrichs (1986) and that they therefore account for the same phenomena of English that his rules accounted for. No less importantly, they do not account for the cases that his proposal did not account for either (see section 4). The main advantage of our proposal, in addition to the fact that it lacks some of the redundancy that is present in Hinrichs' proposal as a result of his use of the four Vendler classes, is that it brings to light why and in exactly which cases rules for temporal interpretation that are formulated in terms of Aktionsart and/or aspect, such as that of Hinrichs (1986), make incorrect predictions for languages such as Dutch that lack grammaticalized forms of progressive/imperfective aspect. This will be shown in section 3.

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[4] The English Simple Past is not always perfective in meaning (cf. 3.1). However, from the viewpoint of interclausal temporal relations, the simple tense/Progressive dichotomy is crucial only in the case of [+ telic] propositions (cf. 2.3), and in these cases the label [+ perfective] will suffice to denote the relevant semantic feature.

[5] Contrary to Hinrichs, who defines the position of R_i relative to E_{i-1}, I define the position of R_i with respect R_{i-1}, just like e.g. Dowty (1986) and Van Eynde (1992).

3. The case of Dutch

3.1. 'Progressive aspect' in Dutch. Although Dutch has some constructions that are often considered as equivalents of the English progressive[6], the expression of imperfective/progressive aspect is not obligatory in Dutch; Dutch belongs to the group of languages in which 'the non-progressive form does not exclude progressive meaning' (Comrie 1976:33, cf. Boogaart 1991a). *Table 1* illustrates the relation between the past tenses of English (the simple past and the past progressive) and those of Dutch (the preterit and so-called progressive locative verb formations).[7]

Table 1. Meaning and Form: Aspect in English and Dutch

Perfective meaning		Imperfective meaning	
(En)	*Simple Past*	*Progressive*	
(Du)	*Preterit*		*Locative*

The table shows that in some contexts where English obligatorily uses a progressive verb form Dutch may use a simple form of the verb. In fact, in an investigation of actual translations Vandenbergen (1971) found that in 77,3 % of all translations a progressive verb form is rendered by a simple form in Dutch. In the following subsection I will consider the consequences of the difference between English and Dutch on this point for our rules proposed in (6).

3.2. 'Ambiguous' cases of Dutch. It emerges from (6) that in the case of [+ telic] propositions the distinction between simple tenses and progressive verb forms in English is the crucial factor in determining the position of R_i relative to R_{i-1}. Therefore, if we apply these rules to Dutch, in the case of [+ telic] propositions expressed in sentences containing a preterit, our three rules cannot decide the position of R_i relative to R_{i-1}; as shown in the previous subsection, the preterit in

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[6] Both the verb formation consisting of *aan het* + INF + *zijn* (*to be at the* INF), and the one consisting of *zitten/staan/liggen/lopen/hangen* + *te* + INF (*to sit/stand/lie/walk/hang to* INF) are referred to as locative in the table below because they resemble concrete locative expressions, not just formally and semantically, but also where their discourse function is concerned (see Boogaart 1991a). A third possibility of marking progressive aspect in Dutch is the construction *bezig zijn met/te* + INF (*to be busy with/to* INF).

[7] As for English, the table shows that the meaning of the simple past and past progressive is not exhaustively characterized by our features [+ perfective] and [- perfective]. Specifically, not all predicates can occur with a Progressive verb form, not even if they clearly have imperfective meaning (this applies particularly to *states*), so that progressive aspect is at best a subcategory of imperfective aspect (cf. Comrie 1976).

Dutch is systematically ambiguous between a [+ perfective] and a [- perfective] reading.

That we cannot formulate a rule for Dutch sequences of [+ telic] propositions expressed in simple past sequences is in accordance with the fact that we cannot, in the absence of further context, decide between a sequence or an overlap interpretation in sequences such as exemplified in (7).[8]

(7) a. Toen ik   binnenkwam, deed   Piet de   afwas.
         When I   entered,   did   Piet the   dishes
     b. Toen ik   binnenkwam, schonk Piet de   wijn in.
         When I   entered,   poured Piet the   wine in

As the preterit in Dutch is not aspectually marked either for perfectivity or imperfectivity, sequences such as (7)a en (7)b are vague where the temporal relation is concerned. Although, pragmatically, temporal overlap may be the preferred interpretation for (7)a, and temporal sequence may seem most likely for the events in (7)b, it is not possible to decide the correct temporal interpretation of sequenced [+ telic] propositions in Dutch on strictly semantic grounds; a pragmatic explanation for the temporal interpretation of these sequences will be proposed in section 5. The semantic ambiguity noted here does not exist in the translation equivalents of these sequences in English; depending on whether the temporal relation between the events is understood as sequential or overlapping, the main clause has to be rendered by a simple past or progressive verb form in English.

Thus, a considerable number of Dutch cases cannot be handled at the (semantic) level of the sentence. But even if the information provided by aspect and Aktionsart is non-ambiguous, exceptions that are not language-specific can be found to any of our rules proposed. One such class of exceptions will be discussed in the following section.

4. Non language-specific exceptions to Akionsart based rules for temporal interpretation

The main objection that can be made to 'explanations' of interclausal temporal relations that are based solely on semantic and syntactic information - and this includes the one I myself proposed in (6) - is that they do not always predict the correct interpretation. For reasons of space, I will restrict myself to exceptions to our

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[8] The difference between aspect languages and non-aspect languages is brought to light most clearly by sequences such as these. Our discussion, however, applies equally to sequenced main clauses.

rule (i).[9] This rule predicts that [- telic] propositions never introduce a new point of reference; therefore, they do not move narrative time forward (cf. fn.2), and, consequently, the event expressed will temporally overlap with a preceding event. A well-known counterexample to this rule is given in (8); the sequence given in (9) can be considered as a relevant Dutch counterpart of this example.[10]

(8)   Jameson entered the room (e_1), shut the door carefully (e_2) and switched off the light (e_3). *It was pitch dark around him* (e_4) because the Venetian blinds were closed (e_5). (Hinrichs 1986:68)

(9)   Als het muisje tracht weg te lopen (e_1) heeft ze het met een forse sprong weer te pakken (e_2) en slingert het met uitgestoken klauw omhoog (e_3). *Bebloed ligt het grijze diertje tussen de struiken* (e_4). (Frans Pointl, *De kip die over de soep vloog*, p.10)
         'When the little mouse tries to get away, she catches it again with one big jump and, with her paw stretched out, throws it up into the air. Covered in blood, the little grey animal lies in the bushes'

In light of examples such as (8) and (9) our rule (i), from a strictly semantic point of view, should be reformulated as follows.

(10)   *If Aktionsart S_i is [- telic], then $R_i = R_{i-1}$, or $R_i > R_{i-1}$*

Evidently, in (8) and (9) the temporal overlap interpretation that was predicted by our rule (i) in its earlier formulation is not allowed because we understand a causal connection to exist between the events presented. If e_2 is understood as being caused by e_1, however weak or indirect this causal connection may be, then e_2 is temporally ordered after (the beginning of) e_1, irrespective of the question whether e_2 is presented with a proposition that is [- telic] or [+ telic]. Thus, to predict the correct temporal interpretation in cases such as exemplified in (8) and (9) we cannot do without knowledge of cause/effect relations, provided either by contextual information or by our general knowledge of the world. But then, as soon as one accepts that context and world knowledge have a role to play in cases such as exemplified above - and in the domain of temporal relations in texts this is widely acknowledged (see, among others, Dry 1983; Dowty 1986; Declerck 1991; Lascarides 1992) - then it does not seem plausible that in the cases that were correctly predicted

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[9]   For similar counterexamples to our rules (ii) and (iii) see e.g. Kamp & Rohrer (1983), who deal with French examples, and Boogaart (1991b) for Dutch counterparts of these.

[10]   It should be noted that examples such as these are counterexamples to our rule (i), but not to Hinrichs' rule for *states*. In Hinrichs' approach *states* overlap with a point R that is placed 'just after' the E of the preceding sentence, but do not necessarily overlap with this *event* itself as well. In fact, Hinrichs admits that in the case of *states* 'the ordering [...] has to remain vague between the overlap and the precedence relation' (1986:69).

by our rules in (6) this contextual information does not play any role at all. Moreover, from the point of view of text coherence, the reader needs to infer a connection between the events presented that is not strictly temporal, such as a causal one, in all cases and not just in cases such as (8) and (9).

5. Temporal Relations and Coherence Relations

For a sequence of sentences to make up a text, the events presented in the consecutive sentences should not be related merely in a temporal way; a temporal relation, be it one of sequence or overlap, can be seen between literally anything that happens or exists literally anywhere in the world. Therefore, temporal relations as such are not a sufficient condition for coherence. I will argue that the temporal relations between the events presented in a narrative can be inferred from the non-temporal coherence relations that exist between them (see Boogaart 1991b; cf. Caenepeel 1989; Lascarides 1992). I believe that such an approach provides an explanation for the temporal interpretation of the cases that are correctly predicted by Aktionsart-based rules for temporal interpretation such as in (6), as well as for both the Dutch cases in (7) and the 'universal' exceptions to such rules as (8) and (9).
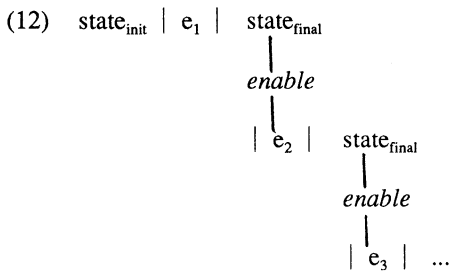
Let us first consider a typically narrative sequence of [+ telic] propositions such as (11), the events in which are interpreted as having happened in sequence.

(11)   Hij stond op (e_1), liep naar de boekenkast (e_2) en pakte het woordenboek Engels/Nederlands uit de kast (e_3).
        'he got up, walked to the bookcase and took the English/Dutch dictionary from the case'
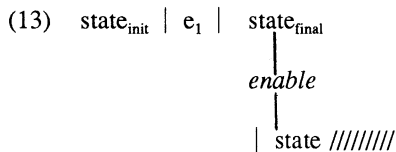
As sequences of [+ telic] propositions, particularly in Dutch (where a [- perfective] reading may be unmarked linguistically), do not automatically trigger forward movement of R, we cannot explain the temporal ordering in (11) exclusively by Aktionsart. But, if we assume that the temporal relation is inferred from a non-temporal coherence relation such as a causal one, as was suggested above, then how are these events connected if not strictly temporally?

I believe that the coherence relation which links the events in (11) can be characterized as *enablement* rather than strict causality. However, the enablement relations in this sequence are not directly between the events that are explicitly mentioned (cf. Molendijk 1992). Recall that in section 2.1 we defined the semantics of of [+ telic] Aktionsart as 'potential change of state' (see the graphic representation in (4)). The state preceding e_1 (/opstaan/) in (11) could be described as /not be standing up/. The state resulting from e_1 can be described as /to be standing up/. Now, it is one of the necessary conditions for e_2 (/walk (to the bookcase)/) to occur that the agent is standing up. So, rather than claiming that e_1 and e_2 are directly

related via enablement, we should say that *the state resulting from e_1 is a necessary (but not a sufficient) condition for e_2 to occur*. The state of /being on one's feet/ is not mentioned explicitly in the text; it has to be inferred as the cement linking e_1 and e_2 together. Likewise, to be able to take a book from a book case (e_3) one has to be near the bookcase. Again, /to be standing at the book case/ is the state resulting from walking to the bookcase (e_2); and it is via this inferred state that e_1 and e_2 are 'causally' connected. Thus, the enablement relations in (11) can be represented as follows (cf. Moens & Steedman 1988; Caenepeel 1989).

(12)   state$_{init}$ | e_1 | state$_{final}$
                                       |
                                   enable
                                    |
                         | e_2 | state$_{final}$
                                            |
                                      enable
                                      |
                                    | e_3 | ...

Returning now to the non language-specific exceptions to our rule for [- telic] propositions such as (8), here too the kind of causality involved is not causality in the strict sense that the event of switching off the light is a necessary and sufficient condition for the room to be dark; it may be broad day light. However, if it is dark, then in any case the lights are not on. Thus, the relation between e_3 and e_4 in (8) is not that much different from our enablement relation discussed above. In fact, the characterization is much the same: the state resulting from e_3 is a necessary (but not a sufficient) condition for e_4 (where e_4 is [- telic]), cf. the graphic representation in (13).

(13)   state$_{init}$ | e_1 | state$_{final}$
                                       |
                                   enable
                                    |
                             | state /////////

Thus, if we assume that temporal relations are always inferred from non-temporal coherence relations, then sequences such as these are no longer in need of a special treatment.

Finally, knowledge of causal relations is exactly what we need to decide between a sequence and an overlap interpretation in Dutch sequences of [+ telic] propositions such as exemplified in (7) (section 3.2), which could not be decided on the basis of aspect and Aktionsart. Either some sort of causal connection can be seen between the events and, consequently, these are interpreted as happening in sequence,

or there is no causal connection whatsoever and in that case the events will temporally overlap.[11] When taken out of context it may be easier to see a causal connection between the events in (7)b than between the events in (7)a, which explains the preferred interpretation of these sequences. However, as soon as there is an indication in the text about the (non)existence of a causal connection between these events, this information will take priority over our common world knowledge.

A more general point concerning the kind of causal knowledge needed in the determination of interclausal temporal relations is the following. Causal connections between events are not inferred on the basis of previously established causal laws (as Lascarides 1992 suggests) - the number of causal laws needed would be an infinite one -, but rather arise as ad-hoc solutions in the reader's efforts to arrive at a coherent representation of a text. It is not so much that it was part of the reader's world knowledge before he read the text that the events presented are causally connected; instead, he understands them to be causally related only at the moment that he sees them brought together in language by a narrator (cf. Adams 1989). The reader of the text would know how to connect these events, not on the basis of world knowledge, but on the basis of further context, i.e. knowledge of the text's world, possibly with its own causal laws.

6. Conclusion

To explain the temporal ordering in exceptions to Aktionsart-based rules for temporal interpretation, knowledge of non-temporal relations, such as causal ones, is indispensable. The role of pragmatic knowledge is particularly, though not exclusively, relevant when non-aspect languages such as Dutch are concerned (cf. my discussion of the sequences in (7)).

In this paper I have argued that this approach can be generalized to cover those cases that were correctly predicted by rules for temporal interpretation that are based solely on the semantic contribution of Aktionsart. Such an approach, in which temporal relations, in the absence of explicit markers, are inferred from non-temporal relations, is particularly attractive from the point of view of text coherence: temporal relations as such are never a sufficient condition for coherence. Moreover, it is not dependent on the prior determination of Aktionsart, which is problematic to say the least (see, among others, Dowty 1986; Janssen 1986). The determination of coherence relations from contextual information and world knowledge is, admittedly, not straightforward either. However, I hope to have shown that in the domain of temporal relations in texts this may be a worthwhile concern for future research.

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[11]   In accordance with traditional text oriented research, in the latter case the coherence relation can be characterized as *background*.

References

Adams, J.K. (1989) 'Causality and Narrative', *Journal of Literary Semantics* 18, 149-162.

Boogaart, R. (1991a) '"Progressive Aspect" in Dutch', in F. Drijkoningen and A. van Kemenade, eds., *Linguistics in the Netherlands 1991*, John Benjamins, Amsterdam/Philadelphia, 1-9.

Boogaart, R. (1991b) 'Temporele Relaties en Tekstcoherentie', *Voortgang, Jaarboek voor de Neerlandistiek* 12, 240-264.

Caenepeel, M. (1989) *Aspect, Temporal Ordering and Perspective in Narrative Fiction*, PhD thesis, University of Edinburgh.

Comrie, B. (1976) *Aspect*, Cambridge University Press, Cambridge.

Dahl, Ö (1981) 'On the Definition of the Telic-Atelic (Bounded-Unbounded) Distinction', in P.J. Tedeschi and A. Zaenen, eds., *Tense and Aspect*, Syntax and Semantics 14.

Declerck, R. (1991) *Tense in English, its Structure and Use in Discourse*, Routledge, London.

Dowty, D.R. (1986) 'The Effects of Aspectual Class on the Temporal Structure of Discourse: Semantics or Pragmatics?', *Linguistics and Philosophy* 9, 37-61.

Dry, H. (1983) 'The Movement of Narrative Time', *Journal of Literary Semantics* 12, 19-53.

Hinrichs, E. (1986) 'Temporal Anaphora in Discourses of English', *Linguistics and Philosophy* 9, 63-82.

Janssen, Th. A.J.M. (1986) 'Het voltooid deelwoord', *Glot* 9, 57-78.

Kamp, H. and Ch. Rohrer (1983) 'Tense in Texts', in R. Bauerle, C. Schwarze, A. van Stechow, eds., *Meaning, Use and Interpretation*, De Gruyter, Berlin.

Lascarides, A. (1992) 'Knowledge, Causality, and Temporal Interpretation', *Linguistics* 30, 941-973.

Moens, M. and M. Steedman (1988) 'Temporal Ontology and Temporal Reference', *Computational Linguistics* 14, 15-28.

Molendijk, A. (1992) 'Reference Time, Temporal Ordering, Temporal Clauses', in D. Gilbers and S. Looyenga, eds., *Language and Cognition* 2, 253-264.

Partee, B. (1984) 'Nominal and Temporal Anaphora', *Linguistics and Philosophy* 7, 243-286.

Reichenbach, H. (1947) *Elements of Symbolic Logic*, Dover Publications, New York.

Vandenbergen, A.M. (1971) 'Dutch Equivalents of the Expanded Form', *Studia Germanica Gandensia* 13, 85-111.

Van Eynde, F. (1992) 'Towards a Dynamic and Compositional Treatment of Temporal Expressions', in P. Dekker and M. Stokhof, eds., *Proceedings of the Eighth Amsterdam Colloquium*, Amsterdam, 153-172.

Vet, C. (1980) *Temps, Aspects, et Adverbes de Temps en Francais Contemporain: Essai de Sémantique Formelle*, Librairie Droz, Genève.