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# Tempus – Aspekt – Modus

Die lexikalischen und grammatischen  
Formen in den germanischen Sprachen

Herausgegeben von  
Werner Abraham und Theo Janssen

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## Preterite, (Present-)Perfect and Future\*

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### 0. *Introduction*

Among the many peculiarities of the German tense system which make its description or reconstruction such a difficult task to perform, there is one outstanding stumbling-block, viz. the relation between the - morphologically simple - Preterite and the - compound - (Present-)Perfect.

Disregarding problems of variety - in spoken German in the South, the Preterite either doesn't exist or is restricted to modal verbs, e.g.

- (1) *Er wollte kommen.*

there still remains one basic problem about these two tenses: In some contexts, there seems to be no - or at least no important - difference in meaning, as in

- (2)(a) *Gestern waren wir klettern.*

- (b) *Gestern sind wir klettern gewesen.*

- (3) - *aber daß mein Mann mich nahm, trotz einem Kind, daß er Angela ein liebevoller Vater geworden ist, der keinen Unterschied gemacht hat zwischen ihr und seinen eigenen Kindern, das weißt Du nicht.*

(Jung, Die Magd vom Zellerhof, 43)

In other cases, the difference matters:

- (4) *Heute ist das Furiose zurückgetreten zugunsten einer auf wenige signifikante Elemente reduzierten Darstellung.*  
(Freisinger Tageblatt, 8./9.9.1973)

So if we want to avoid the theoretically unsatisfactory solution of two variants of the (Present-)Perfect of which only one would be equivalent to the Preterite, we have to look for an analysis which is flexible enough to furnish the necessary semantic differences between the two tenses on the one hand, and to show, on the other hand, how these differences can almost be cancelled in cases like (2b) and (3).

### 1. *The tense-logical language ADETAL 2(V)*

The following pages will present the outlines of a reconstruction in the framework of a tense-logical language ADETAL 2 (V).

To keep technicalities at a minimum, we will give a rather informal outline.<sup>1</sup>

#### 1.1 *Syntax of ADETAL 2(V)*

Syntactically, ADETAL 2(V) is a language of propositional logic, enriched with tense operators and temporal adverbials. The set of tense operators, taking formulae into tensed formulae, is  $T_0$ , which is to be  $T_{01} \cup T_{02}$ , where  $T_{01}$  is to be  $\{ \text{Pres, Pret, Fut} \}$ ,  $T_{02}$  is to be  $\{ \text{Perf} \}$ . This split mirrors in the syntactical rules, as all elements of  $T_0$  operate on untensed formulae to yield tensed ones, and, moreover, the operators in  $T_{01}$  operate on formulae already tensed by Perf!

The idea behind this construction, of course, is to render the compound tenses of German, viz. (Present-)Perfect, Preterite-Perfect and Future-Perfect, by compound formulae in the language of logical reconstruction. Simple formulae of ADETAL 2(V) correspond to German sentencoids with the main verb in the infinitive, viz. p: *wir sein klettern*, perfectivized formulae correspond

to sentencoids with the main verb in the infinitive of the perfect, viz.

Perf(p): *wir sein klettern gewesen*

and finally, the Operators of T01 take these into 'normal' German sentences with the corresponding tense forms:

Pres(p):	<i>Wir</i>	<i>sind</i>	<i>klettern.</i>	
Pret(p):	"	<i>waren</i>	"	
Fut(p):	"	<i>werden</i>	"	<i>sein.</i>
Pres(Perf(p)):	"	<i>sind</i>	"	<i>gewesen.</i>
Pret(Perf(p)):	"	<i>waren</i>	"	"
Fut(Perf(p)):	"	<i>werden</i>	"	<i>gewesen sein.</i>

We will, for the time being, neglect all problems concerning the status and treatment of the Future and Future Perfect. We will take these up in section 3.

The temporal adverbs are treated in a totally liberal way, operating on formulae simpliciter, regardless if these are tensed or not. Before we can comment on that in any sensible way, we will have to say something about the interpretation of our language first.

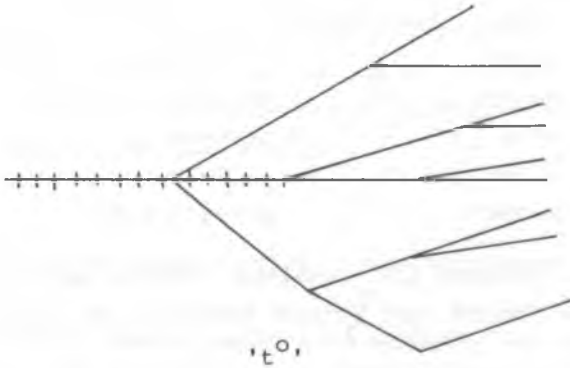
## 1.2 Semantics of ADETAL 2(V)

The semantic universe of our language is to be a set of **possible worlds**, given als functions from simple formulae and time intervals to truth values. To make this fit to our descriptive needs, we superimpose some structure:

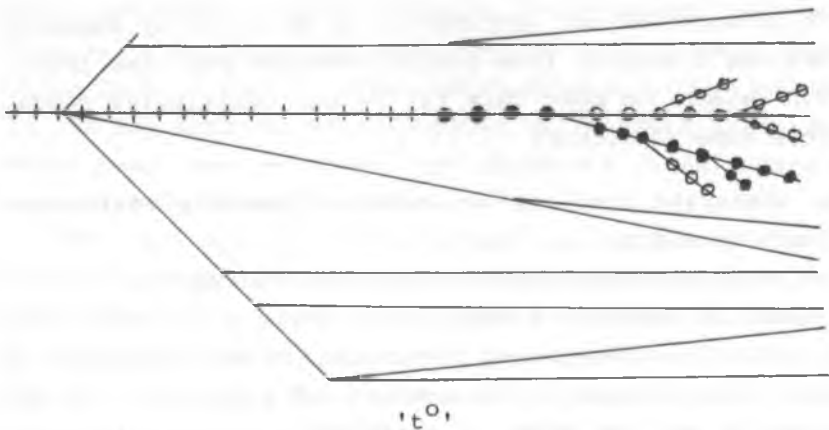
- First, we postulate that our universe of possible worlds has the structure of a **tree**.
- Second, we stipulate for each model we define relative to our tree of possible worlds, a designated world, the **real** one, intuitively, and two designated intervals, in the tradition of Reichenbach<sup>2</sup> and adopting a perspective of Åqvist's<sup>3</sup>, we see these intervals as the **time of reference** and the **time from**

where the first has been obtained. The original **time of reference** and **time from where** will be given by another designated interval, the **time of speech**.

Once we have singled out a **real world**  $w_0$  at the speech time ( $t^0$  henceforth), we also can designate the **real past** of our world  $w_0$ . Graphically, we have the following picture:



The lines represent "worlds" in the sense of temporal world-segments, and the line +++++ indicates the "real world" and its past up to  $t^0$ . The branches emerging from after  $t^0$  are to be understood as the possible futures of the real world with respect to  $t^0$ . Among these, we can again designate some as the *prima-facie-futures*, i.e. the courses the world is more (or even most) likely to take. So we get a picture like this:



where ~~+++~~ represents the real world up to  $t^0$ , the dotted lines represent the possible futures, and the line with the full dots the prima-facie-futures of the designated world. For the sake of convenience, we call the union of the real world up to  $t^0$

with all its futures  $\Omega_{*}^{w_0(t^0)}$ , and the restriction of  $\Omega_{*}^{w_0(t^0)}$  to the prima-facie-futures,  $\Omega^{w_0(t^0)}$  4

Relative to the sketched semantic background, we can now give truth-conditions for tensed formulae.

The general idea about the function of tense-operators is that they introduce restrictions on the relative positions of the **time of reference** and the **time from where** in the universe structured as above, and that they, pace Reichenbach, be set up as functions from formulae, worlds and pairs of time intervals to truth values. Let us start with the truth-conditions for the **present tense**. Consider the following sentences:

- (5) *Die Sonne scheint.*
- (6) *Der Kaminfeger kommt.*
- (7) *Der dreißigjährige Krieg bricht aus.*

Only in (5), it seems, do we have a strict restriction that the time of reference should at least overlap the time of speech, which serves as time from where. (6) is very naturally understood as an announcement that the chimney-sweep **will** come, i.e. the time of reference must be in the future, and in (7) we simply know that the event happened long ago, so the time of reference must be in the past. The moral to be drawn is of course that the present tense imposes no restriction on the time of reference  $t^r$ ! So an interpretation function  $g$  for our operator Pres has to be:

$g(\text{Pres}(\alpha), w_0, t^r, t^0) = 1$  iff for a world  $w$  such that  $w \in \Omega^{w_0(t^0)}$ ,  $g(\alpha, w, t^r, t^0) = 1$ . (With 1 for true, 0 for false.)

In the case of  $\alpha$  being a simple sentence we stipulate that this last clause reduces to  $w(t^r)(\alpha) = 1$  for at least one

interval  $t'$  which overlaps  $t^R$ , as worlds in our sense are functions from time intervals and simple, or basic, sentences to truth values!

In other words, in a model characterized by the intervals  $t^R$  and  $t^O$ , there is no restriction for the present! Note that this must not be understood as saying that  $t^O$  doesn't matter, as the domain of interpretation  $\omega^O(t^O)$  is construed with regard to  $t^O$ !

This semantics for the present tense is very weak, but we should keep in mind that we still have time-adverbials whose role is exactly to furnish more information about the time of reference, e.g. in (6a) *Morgen kommt der Kaminfeger*. the interpretation of *morgen* would restrict  $t^R$  to subintervals of the day after the day of speech, and in (7a) *1618 bricht der dreisigjährige Krieg aus.*, the interpretation of 1618 restricts  $t^R$  to subintervals of the year 1618.

And even in the original sentences (6) and (7), we can find, by Gricean reasoning, appropriate information about the reference time, which in the case of (6), would be roughly: To understand (6), which is in the present tense, information about  $t^R$  is necessary. As none is provided, a cooperative speaker must consider it recoverable. As a  $t^R$  in the past would be in contradiction with the postulate "Be relevant!", and as a  $t^R$  in the immediate present of the speech situation makes the sentence obviously wrong,  $t^R$  will be *after*  $t^O$ , so (6) is probably an announcement about a future event. In the case of (7), basic historical knowledge will at least lead to a  $t^R$  in the past, if not to 1618.<sup>5</sup>

The interpretation of the Preterite is much simpler, as the tense itself induces a stronger restriction, namely that  $t^R$  be in the past of  $t^O$ :

$g(\text{Pret}(\alpha), \omega_O, t^R, t^O) = 1$  iff there is a  $t$  which overlaps  $t^R$ , such that  $\omega_O(t)(\alpha)$  is true, and  $t^R$  lies before  $t^O$ . In other words, the Preterite states that the event expressed by  $\alpha$  be in the past of  $t^O$ .



We defer the discussion of the Future to section 3 and turn to the semantics of the Perf-Operator. Doing so, we should keep in mind that a formula with a Perf-Operator corresponds to a german sentencoid with an **infinitive perfect**. The proposed interpretation function goes like this:

$$g(\text{Perf}(\alpha), w', t', t) = 1 \text{ iff for at least one } t'' \text{ before } t', \\ g(\alpha, w', t'', t') = 1$$

If we compare this with the definition of Pret, we see that the parallel is that both Operators place the event expressed by  $\alpha$  at an interval overlapping a time of reference **before a time from where**. The difference is, that the **time from where** for the Perf is "dangling". This solution unfolds its discrete charm when we analyse sentences in the (present-)perfect or preterite-perfect: the higher operator furnishes an interval for the dangling time from where, viz. its time of reference!

To show this, we spell out the truth conditions for one example in full detail:

(8) *Wir sind auf dem Scheffauer gewesen.*

The corresponding formula, with  $p$ : *wir auf dem Scheffauer sein*, would be

$$\text{Pres}(\text{Perf}(p))$$

If we evaluate this formula, we first apply the interpretation function of Pres, which gives us for a model characterized by  $w_0, t^r, t^0$ :

$$g(\text{Pres}(\text{Perf}(p)), w_0, t^r, t^0) = 1 \text{ iff for at least one world } \\ w \in \Omega_{w_0(t^0)}, g(\text{Perf}(p), w, t^r, t^0) = 1.$$

This step has led us now to a world  $w$  in  $\Omega_{w_0(t^0)}$ , which contains, as we remember,  $w_0$ , its past and its prima-facie-futures; at that world  $w$ , we must now evaluate the embedded operator Perf:

$$g(\text{Perf}(p), w, t^r, t^0) = 1 \text{ iff for at least one } t^{r'} \text{ before } t^r, \\ g(p, w, t^{r'}, t^r) = 1.$$

So the evaluation of Perf takes the original **time of reference**  $t^R$ , given by the higher tense-operator, as **time from where** it goes to a **new reference-time**  $t^{R'}$  before  $t^R$ . Finally, we have reached the point where the simple, embedded sentence  $p$  is evaluated as true iff  $w(t'')(p) = 1$  for at least one  $t''$  overlapping  $t^{R'}$ .

## 2. *Preterite versus (Present-)Perfect*

We are now in a position to give a brief sketch of how our reconstruction treats the differences between these two tenses, and show our solution to be empirically adequate.

One first difference emerges immediately from our semantic analyses: The preterite does **not** combine with temporal adverbs pertaining to the future, whereas the (present-)perfect does. Adverbials, in our framework, restrict the time of reference introduced by the tense operators dominating them immediately, as we said. Now, in the case of, say  $\text{Pret}(\text{morgen}(p))$ , the time of reference is, by virtue of our truth-conditions for Pret, already placed in the past of  $t^O$ , and this leads to a contradiction with the truth conditions for  $\text{morgen}(p)$ , which would be:  $g(\text{morgen}(p), w_o, t^R, t^O) = 1$  iff  $t^R \subseteq$  'the day after the speech-event', and  $g(p, w_o, t^R, t^O) = 1$ .

In the case of  $\text{Pres}(\text{morgen}(\text{Perf}(p)))$ , no problem arises, as the Pres-operator imposes no restriction whatsoever on the time of reference.

In showing this difference, we have led the way to another phenomenon which is readily described in our framework: if temporal adverbs restrict, semantically, the time of reference of the tense-operator dominating them immediately, should not the (Present-)Perfect (and, as it were, the Preterite-Perfect and Future-Perfect) give rise to different readings of sentences with temporal adverbs, corresponding to scope differences? And indeed, we find sentences in the (Present-)Perfect, where the time-adverb specifies the time of reference introduced by the Perfect, e.g.

(9) *Wir sind gestern klettern gewesen.*

corresponding to Pres(Perf( *gestern* (p))), and, as well, we find sentences like (4) above, or like

- (10) *Manche Erholungsgebiete haben die Grenzen ihrer Belastbarkeit [...] heute [...] erreicht oder überschritten.*  
(Freisinger Tageblatt, 8./9.9. 1973)

Corresponding to

Pres( *heute* (Perf(p)))

We even find sentences which can be interpreted both ways, according to different contexts; e.g. Reinhold could have said.

- (11)(a) *Ich habe heute zwei Achttausender bestiegen [und also nur noch 14 vor mir.]*  
Pres( *heute* (Perf(p)))
- (11) (b) *Ich habe heute zwei Achttausender bestiegen [und bin schrecklich müde.]*  
Pres(Perf( *heute* (p)))

And, taking up our first remarks in section 0, we see now, that exactly in sentences with (Present-)Perfect and time adverbs with wider scope, we can not substitute the Preterite without a change of meaning,

e.g.

- (10)(a) *Manche Erholungsgebiete überschritten heute die Grenzen ihrer Belastbarkeit.*

clearly places the event into the day meant by "heute"!

This seems to be the reason, by the way, which has led some scholars to the view that the (Present-)Perfect, but not the Preterite, expresses something like 'relevance for the time of speech'.<sup>6</sup> In our reconstruction, this quasi 'aspectual' effect is predicted only for sentences with time adverbials having wider scope, but not for others. And indeed, in the other cases, we can freely substitute the Preterite without the resulting change in meaning being relevant to communication:

- (11) (a) *Wir sind gestern im Schillertheater gewesen.*  
Pres(Perf( *gestern* (p)))
- (11) (b) *Wir waren gestern im Schillertheater.*  
Pret( *gestern* (p))

In the case of (11a), the time of reference is, by default of further specification, taken to be  $t^0$ , and the evaluation of Perf leads to a time  $t^R$  before  $t^R (= t^0)$ , further specified by *gestern*. In (11b) however, we reach a time of reference before  $t^0$  directly, in one step, by the evaluation of Pret!

The last question we tackle is: What about sentences without time adverbials? The key to an answer is hidden in what we said about sentences (11a) and (b): There is a minimal difference in meaning, viz. that in the evaluation of a sentence in the Preterite, we reach a time of reference in the past of  $t^0$  in one single step, whereas in the (Present-)Perfect case, we have a step in between, identifying  $t^0$  with the time of reference for the present tense, by default; the evaluation of Perf, then, leads to a time of reference in the past of  $t^0$ . This minimal difference can be handled in two ways:

- It can be ignored, thus treating the Preterite and the (Present-)Perfect as quasi equivalent. It is pretty obvious that this very possibility allows for varieties of German without - or almost without - the Preterite.
- For speakers and hearers using the full system, this minimal difference can lead to the following effect: the fact that such a speaker uses, at a certain place in his speech, the morphologically and semantically more complex (Present-)Perfect, can trigger a Gricean reasoning: for using a more complex formulation, thus forcing a more complex interpretation on the hearer, a cooperative speaker must have a reason. The only possible reason lies in the subtle difference in meaning that, by the step of evaluation identifying the time of reference for the Present with  $t^0$ , by default,  $t^0$  is put into focus! This leads to a quasi 'aspectual' effect, as in sentences with time adverbs with wide scope above. This effect emerges especially in cases, where a speaker switches from the Preterite to the (Present-)Perfect, even more so, if the switch goes via an intermediate statement in the present tense, as in:

(12) *Aus einer Schadensmeldung an eine Versicherung, veröffentlicht in einem Rundschreiben des "Hamburgischen Anwaltsvereins": "Ich wollte Fenster putzen. Damit ich von außen*

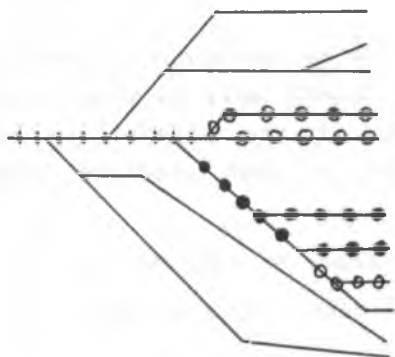
an das Fenster herankommen konnte, legte ich ein Bügelbrett auf die Fensterbank. Mein Mann, der schwerer als ich ist, setzte sich innen auf das Bügelbrett, und ich putzte auf dem Brett stehend das Fenster von außen. Plötzlich klingelte es an der Haustür. Als mein Mann unten öffnete, fand er mich vor dem Eingang liegend. Wir wissen bis heute nicht, wer geklingelt hat. (Spiegel 51/1984, S. 200, Hohlspiegel)

### 3. Does German have a Future?

As, during the whole conference, many discussions were about the Future in German and the question, if German has [!] a Future, if the *werden* + Infinitive (Perfect) is [!] a Future (II) tense, we should now briefly turn to the question if it seems sensible and desirable to treat the constructions with *werden* + Infinitive as tenses, to reconstruct them as tense operators.

If we want to give a serious answer to that question, we should give our discussion a start in clarifying what a tense operator does. If we reconsider our semantics given above, we can say that the role of tense operators was to take us, in the tree-structure of possible worlds, from the designated real world  $w_0$  at the speechpoint  $t^0$ , to a world-time-pair where the evaluation of the formula embedded under the tense operator must take place.

So let us see, now, how we can set up truth-conditions for an operator corresponding to the *werden*- constructions and capturing their semantic behaviour. To do that, we reconsider our universe of possible worlds:



As above, +++++ represents the real world up to  $t^0$ , the dotted lines  $\circ-\circ-\circ-\circ$  it's 'possible futures', and the lines with full dots  $\bullet-\bullet-\bullet-\bullet$  the 'prima-facie-futures': What is new is  $P(w)t^0$ . This is, intuitively speaking, the set of all worlds  $w$  at  $t^0$  which fulfill all basic sentences  $p$  of the set  $\mathcal{P}$ . The idea, of this

construction is to represent knowledge of a speaker about the world as possibly **partial** knowledge, i.e. a speaker knows all sentences of  $\mathcal{P}$  to be true, but this is not a full characterization of  $w_0$ ! <sup>7</sup> On the basis of this knowledge, a speaker can extrapolate, either, in a presentic perspective, about the possibility of other sentences being true, or, in a forward perspective, about the possibility of sentences being true in the future, i.e.

in a world in  $\Omega_{*}^{w_0(t^0)}$  ! It is our claim that the *werden*-construction does exactly the job of such an extrapolation operator, which leads us to postulate the following truth-conditions:

$g(\text{Fut}(\alpha), w_0, t^r, t^0) = 1$  iff  $t^0 \leq t^r$  and for at least one world  $w' \in \mathcal{P}(w)t^0$   $\Omega_{*}^{w_0(t^0)}$ ,  $g(\alpha, w', t^r, t^0) = 1$ .

What this amounts to is that a sentence with *werden* + Infinitive in the main verb is true, if the embedded sentence is true in a world  $w$  at  $t^r$  which is either out of  $\mathcal{P}(w)t^0$ , i.e. a world out of the "information set"  $\mathcal{P}$  at  $t^0$ , or out of  $\Omega_{*}^{w_0(t^0)}$ , i.e. a possible future of  $w_0$  at  $t^0$ . This solution captures presentic possibility, e.g.

(13) *"Ich würde ja nicht abreisen". sage ich, "wenn nicht feststehen würde, daß das Kind gerettet ist, das wirst du mir glauben."* (Frisch, Homo Faber, 175)

as well as it does future possibility, e.g.

(14) *..., und eine halbe Stunde später [...] sagte meine Mutter zu Leo: "du wirst es einmal besser machen als dieser dumme Junge, nicht wahr!"* (Böll, Ansichten eines Clowns, 36)

As our analysis does not treat the future as ambiguous between a modal and a temporal reading, it comes equally well to grips with cases where it is by no means clear if the possibility in question is presentic or futuric, and it even predicts they should occur, as e.g.

(15) *Dein Mann geht sonst um und so weiter, he will be a ghost, und das wirst du nicht wollen.* (Strittmatter, Ole Bienkopp, 19)

So, our Future-operator does, in our semantic perspective, nothing else than did the Pres- and Pret-operators: he takes us to the appropriate world-time-pairs for the evaluation of formulae embedded! To exclude it from the tense-system on the ground that he does not treat temporality simpliciter, but possibility as well, seems undesired, as already the analysis of the Present involved modal ingredients, namely  $\omega_0(t^0)$ . Such a parochial policy would leave us with just the Preterite and Preterite Perfect as proper tenses, turn the Present and (Present-)Perfect into improper tenses with modal overtones, and throw the *werden*-constructions out with the bath. We should add that *werden*, the Future tense marker, combines with the Infinitive Perfect to form the Future Perfect, much in the same way as do the Present and Preterite.

The difference in morphology - the infinitives combined with *werden* remain infinitives, and *werden* goes to the corresponding finite forms, justify, in our opinion, at most to place the future in the periphrastic zone of the German tense system, especially as a treatment of *werden* as a normal modal verb is not even syntactically possible, as shown elsewhere<sup>8</sup>. So no scholar, in the field of German tenses, should adopt the punky slogan "No future!"

#### 4. Conclusion

Some final remarks seem in order: a notorious descriptive problem in the analysis of the German tense system has been given, in the framework of logical analysis, a solution which is both simple and empirically adequate. By taking serious the difference between morphologically simple and compound tenses, and by mirroring this in the logical reconstruction, the key of the difference could be shown to be a question of simple scope difference in the case of examples with time adverbs. The solution carries over to sentences without those adverbs, using Gricean reasoning. Our solution, moreover, covers the problem without introducing any special gadgets into the theory - scope and

Gricean reasonings being necessary for a theory of interpretation anyway. The semantical frame set up in 1.2. allowed, moreover, augmented with a bit of additional structure, a treatment of the Future and Future Perfect covering both their temporal and modal aspects. On the basis of our semantic and pragmatic reconstruction, a complete theory of German tenses seems possible.



## NOTES

- \* The paper profited, I hope, from many discussions, notably during the conference on "Tempus-Aspekt-Modus", Groningen 1988, and with the participants of my seminar in Stuttgart, WS 1988/89, as well as from discussions with Christian Rohrer and Hans Kamp.
- The term "Präsensperfekt" has been coined in Ballweg 1988 to underline the compositional nature of that form. The brackets in the English term will hopefully avoid the impression that we consider the German (Present-)Perfect to be an equivalent of the English Presentperfect!
- 1 A step-by-step development of a more formal version, together with much more empirical background, is given in Ballweg 1988.
  - 2 Cf. Reichenbach 1947, 51.
  - 3 Cf. Åqvist/Guenthner 78.
  - 4 Compare the construction of 'historical moments' in McArthur 76, p. 45 ff.
  - 5 Detailed discussions of such semantico-pragmatic analyses of the Present are to be found in Ballweg 1984, Grewendorf 1984, Heringer 1983. A critical survey is Lernerz 1986.
  - 6 Cf. Duden-Grammatik 1966, 1984, Erben 1972, Grundzüge 1981.
  - 7 This construction traces back to the 'information sets' in Luce and Raiffa 1957. The idea of using them was pointed out to me by Lennart Åqvist.
  - 8 Cf. Fabricius-Hansen 1986 and Ballweg 1987. See also Janssen, in this volume, and the literature given there.

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