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REMARKS ON KAMP-REYLE'S (1993) ANALYSIS OF THE ENGLISH
PERFECT

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1. PURPOSE OF THESE REMARKS

The English Perfect has an aspectual reading under which it expresses the result state of an event and it has a temporal reading under which it expresses a relative past, i.e., a past evaluated not with respect to the utterance time *n* but to a contextually given temporal perspective point. In this paper I will argue that we get a much simpler account if we analyse Kamp & Reyle's (1993)'s (henceforth K&R) aspectual Perfect not in terms of resultativity but in terms of an extended now. The resultative perfect construction is reserved to the stative passive.

Here is an example illustrating K&R's treatment of the PERFECT aspect:

(1) Mary has lived in Amsterdam since 1987.

This is a typical "extended now" (XN) sentence in the sense of (Schiporeit 1971) and (McCoard 1978). Mary's living in Paris starts in 1987 and extends up to and including the speech time. A simplified rendering of the analysis given by K & R is this (reference!):

Note incidentally that the existential reading is possible with states as well:

(8) Franzis has been sick only two times since 1995.

It is not clear to me how this can be expressed in K&R's system, whereas an analysis in terms of XN is obvious.

Considering these examples only, one is lead to prefer an XN-approach without further discussion. But we should not forget that K&R's approach is the most elaborated approach to the English perfect (together with (Dowty 1979)). Their analysis is part of a large system of tense and aspect and we have to look at the details. In particular, we have to see whether the analysis of the present perfect has merits in other respects. The discussion will show that this is not the case. We will propose to revise the theory in this respect. We will discuss other adverbials as well, e.g. **for**-phrases. And we will say something about the following German/English contrast:

- (9) a. Mary has lived in Paris since 1987.
 b. Maria wohnt seit 1987 in Paris.
 c. *Mary lives in Paris since 1987.

In German, and in many other languages, we have to use the present for XN-readings. This time, the XN-intervall is introduced by the adverb **seit 1987**. We will propose that the difference between this adverb and its English counterpart is that while **since 1987** characterises an XN-interval, **seit 1987** introduces and characterises an XN-interval.

2. THE BASIC ARCHITECTURE OF THE K&R-THEORY

I will illustrate the essentials of the system by discussing the treatment of simple tenses, i.e., present and simple past. These tenses are deictic and are evaluated with respect to the **utterance time n**.

1. Tenses are expressed by the finite verb, but they are interpreted at highest node, in K&R's system S', in modern terms CP. Technically this is implemented by temporal features which percolate from the finite verb to S'.

2. Every tense carries one of the following semantic relations:

pres: =

past: <

fut: >

But these should not be identified with the morphological tenses. There are past tenses that have the feature *pres*.

3. There are deictic tenses and anaphoric tenses. It happens that only past tenses may be anaphoric. They have the feature +PAST. Deictic tenses have the feature –PAST. These features refer to a **temporal perspective point** (TPPt). A [-PAST]-tense has the speech time *n* as TPPt. A [+PAST]-tense has the event time of a preceding sentence as TPPt. Don't confuse these features with the semantic features *past* and *pres*! Remember: -PAST says that the tense in question is anaphoric.

4. Tenses introduce a **location time** *t*. This is the temporal frame for the event or state expressed by the tenseless VP.

5. VPs express sets of **events** (*e*) or **states** (*s*). Events typically have a culmination point, whereas states don't have one.

6. Between S and VP there is a VP'-node, which may be thought as the AuxP. At this node the event/state expressed by the tenseless VP is connected to the location time via one of the relations \subseteq or *O*. Events are included in the location time, states include the location time in the past but overlap with it in the present. The reason for this asymmetry is explained in a moment. These relations are what (Klein 1994) calls *aspects*. I will use this term for convenience.

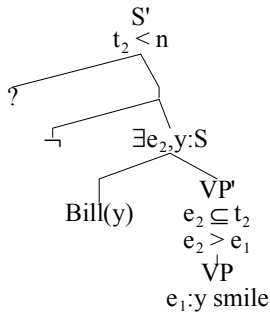
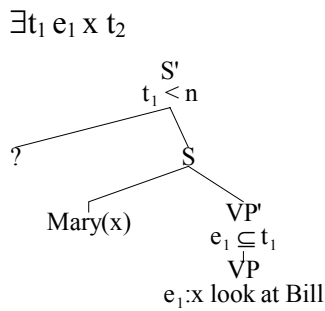
7. Aspects have an anaphoric variable as well, which accounts for narrative progression in a text. The antecedent of an aspect is **called temporal reference point** (TRpt). Events always follow their TRpt, while states hold at their TRpts. The TRpt serves the purpose of relating events anaphorically. The must not be confused with TPPts. We can have event anaphor without having an anaphoric tense.

8. New discourse referents, temporal variables, event variables, state variables have **scope** as wide as "their" DRS, i.e., they are existentially closed there.

9. The place of the semantic negation is between the S'-node and the S-node. The negation introduces a new discourse representation structure. The effect of this is that no discourse referent introduced below the negation can bind a discourse referent introduced by a later sentence.

To give a rough idea of the architecture of the system, consider the analyses of the text

(10) Mary looked at Bill. He didn't smile. (= 5.89)



The negation introduces a nested DRS. Hence every new variable in the scope of \neg is existentially quantified. Therefore, the new event variable e_2 cannot serve as an antecedent for an event introduced by a further sentence. The second VP' is anaphorically related to the first VP', and e_1 is the temporal reference point for the second VP'.

The two structures form a complex DRS and the cumulative interpretation of the formulas attached to the nodes obviously give the correct interpretation of the text.

I believe that the basic architecture of this system is attractive. Since I am not aware of a better system. I want to keep its essentials.

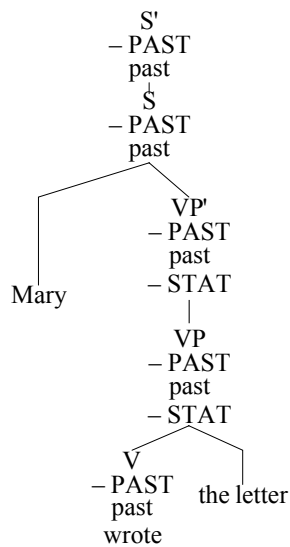
3. SIMPLE TENSES IN K&R

In order to get a feeling for K&Rs use of features, let us look at their analysis of simple past tenses first. The deictic past has the features [-PAST, past]. This means that the TPpt is n and the semantic relation is past, i.e. $<$.

(11) Mary wrote the letter. (= 5.44)

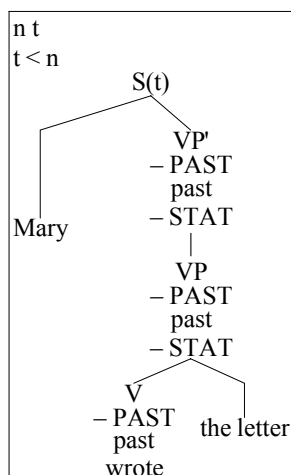
The syntax is this:

(12)



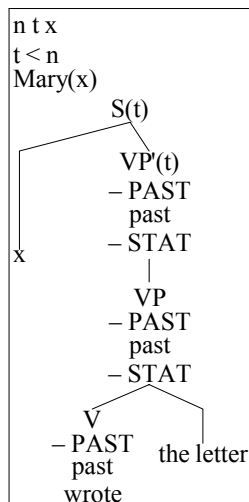
The Tense-Rule CR.S' on p. 610 interprets the features $[-\text{PAST past}]$ as the condition $t < n$ and yields the following intermediate structure.

(13) Result of the Tense Rule CR.S'



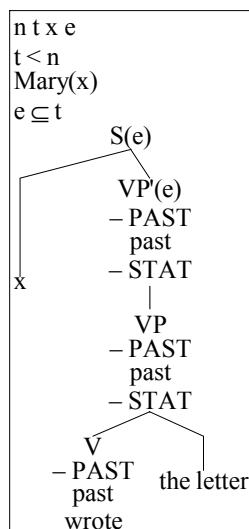
The relevant S-rule (CR.PN, p. 121) converts this structure into the following:

(14) By the S-rule CR.PN on p. 121



The VP-rule (cf. CR.VP' on p. 554) interprets the feature STAT, which has not yet been considered so far. If $STAT = -$, then a new discourse referent e is introduced at the VP-node. If a TRpt is defined, the new event is later than the reference point. The e is included in the location time t . Furthermore, the e replaces the t at the top node, a convention that is not mentioned in the book but that seems necessary. On the other hand, it is not necessary that the variable e is passed to VP', at least not for this construction.

(15) By the CR.VP' rule on p. 554



Two further construction rules reduce this to the final DRS:

(16)

n t e x y
n < t
Mary(x)
e ⊆ t
the letter(y)
e:write(x,y)

It STATE = +, then a new state s is introduced which replaces t in the tree throughout.

An example exhibiting an anaphoric simple past is found in the second sentence of the following text:

(17) Mary had been unhappy in her new environment for more than a year. (= 5.163)

But now she felt at home. +PAST pres +STAT -PERF

The state described by the second sentence refers to the state introduced by the first sentence. It is simultaneous with that state and this simultaneity is described by the semantic pres relation of the past in the second sentence. Without going into the details, let me only indicate the DRS that represents the second sentence:

(18)

t ₂ s ₂ x
t ₂ = s ₁
s ₂ O t ₂
Mary(x)
s:x feel at home

s₁ is the temporal perspective point introduced by the first sentence. We cannot understand the first DRS yet, because we haven't seen K&Rs theory of the perfect yet, and the first sentence contains a past perfect. The next section gives a more explicit statement of the relevant rules, which interpret tense.

4. TEMPORAL REFERENCE AND TEMPORAL PERSPECTIVE

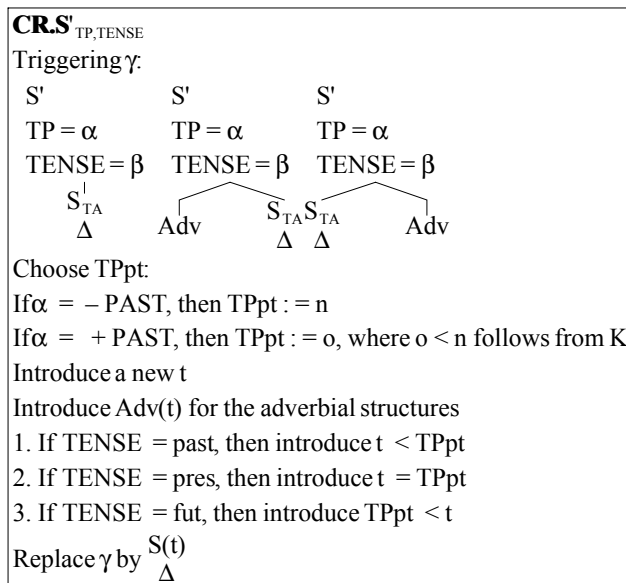
K&R hold the view that the interpretation of tenses depends on two parameters, the *temporal perspective point* (TPpt) and the temporal reference point (TRpt).

The **temporal perspective point** serves to establish the temporal anchor for the interpretation of the sentence. It is denoted by the adverb **now** (cf. p.595). For the present and the future it is always the speech time/event n. For the simple past and the past perfect, it is either n or some time in the past which is determined by the context. Typically, it is an event described by a previous sentence.

In the syntax, a non-past perspective point is expressed by the feature –PAST, whereas the feature +PAST denotes a perspective point in the past. The feature –PAST means that the tense in question is deictic. The feature +PAST means that the tense is anaphoric to a time in the past, i.e., before n.

The TPpt is introduced at the S'-node (= CP), at which tense is interpreted. The rules governing the choice of TPpt are stated on p.610 in CR.S':

(19) K&R's official tense rule



Presumably the restriction $o < n$ is a presupposition. This is the only thing that is said about the antecedent of the +PAST tense. The PPpt can be chosen in quite an arbitrary way. The choice must make sense.

The **temporal reference point** serves the purpose to account for narrative progression (or non-progression). It relates the location time of the new sentence to the time of a previous event or state. There are two principles governing the choice of the relation between the eventuality introduced by the tenseless VP and the TPpt:

1. An event is after the chosen TRpt.
2. A state holds at the chosen TRpt.

Sometimes the choice of a TRpt doesn't make sense, for instance at the beginning of the text. In other words. the choice is somewhat optional. The localisation of eventives happens at a VP' that

does not have a HAVE daughter. The rule is very important for the architecture of the system. Therefore, I quote it.

(20) K&R location of eventives, p.554

CR.VP _{TP,TENSE} Triggering γ : VP' TENSE = α STAT = β \downarrow VP Δ Choose TRpt: Rpt: o	
If STAT = - ,then introduce a new e. If TENSE = past, then introduce : $\begin{matrix} o < e \\ e \subseteq t \end{matrix}$ If TENSE = fut, then introduce : $\begin{matrix} o < e \\ e \subseteq t \end{matrix}$ Replace γ by VP'(e) \downarrow VP Δ	If STAT = + ,then introduce a new s. If TENSE = past, then introduce : $\begin{matrix} s O t \\ o \subseteq s \end{matrix}$ If TENSE = pres, then introduce : $\begin{matrix} s O t \\ o O s \end{matrix}$ If TENSE = fut, then introduce : $\begin{matrix} s < t \\ o O s \end{matrix}$ Replace γ by VP'(s) \downarrow VP Δ

Like the TPpt, the TRpt is an anaphoric variable. It is important to keep in mind that it is located at the VP'.

Both temporal points are book-keeping devices. They play no role in the final representation. K&R say that Reichenbach's (1947) theory suffers from the defect of not distinguishing these two different functions of "reference time". Reichenbach's reference time seems to coincide with the TPpt, however. As far as I can see the temporal reference point has nothing to do with tense directly. It is not introduced at the S'-node, where tenses are interpreted. It rather is introduced at the Aux-node VP' which introduces events (cf. CR.VP', p. 554).

The feature system uses the TENSE feature *pres*, *past*, *fut* in addition which are interpreted as the relation =, < and >, respectively.

We are now in a position to slowly approach K&Rs analysis of the perfect.

5. K & R ON ASPECT

The perfect has several readings in the K & R-system. It has an aspectual reading which expresses the result state of an event and it expresses a relative past. To understand aspectual reading, we start with K & Rs theory of aspect.

iff $\exists s \exists e [s = n \ \& \ e < s \ \& \ e: \text{Mary meet the president}]$

The equivalence of the last two statements is obvious: If the speech time is contained in a larger state abutted by e , then e precedes the speech time.

So, in terms of truth-conditions this analysis doesn't buy anything compared with the more traditional account. But there is a difference in logical form. K&R's analysis has a state variable that could be the carrier of adverbial modification by a durative adverbial, and we have to see what use K & R make of that.

A final remark. K & R do not formulate aspectual operators seriously. The progressive certainly is a modal operator and they refer the reader to the literature (Dowty 1979);^oLandman, 1992 #467%.

6. K&R ON THE PRESENT PERFECT

6.1. *The Problems*

The classical topics of the English present perfect are the following ones:

- (27) a. Einstein has visited Princeton.
 b. Princeton has been visited by Einstein.

The first sentence exhibits a life time effect, whereas the second doesn't. The phenomenon has been discussed in the literature at least since (Pickbourn 1789). K&R don't speak about that and I won't either.

A second classic is what (Klein 1992) has called the present perfect puzzle. Why do we have the following contrast between English and German?

- (28) a. *We have been in Ibiza last summer.
 b. Wir sind im letzten Sommer in Ibiza gewesen.

I don't want to speak about that either. Presumably, the extended now approach, which I advocate has to say something about that.

The topic, K&R are interested in is the third one, viz. the interaction of the present perfect with measure adverbials.

- (29) a. Mary has met the president.

- b. *Mary has met the president for 3 hours.

We have to explain the contrast. The more serious problem is to account for the non-ambiguity of (30a) and the ambiguity of (30b).

- (30) a. Mary has lived in Amsterdam. (non-ambiguous)
 b. Mary has lived in Amsterdam for 3 years. (5.146, ambiguous)

The sentence is ambiguous between an extended now reading or universal reading (U-perfect) and an existential reading (E-perfect).

As related but slightly different problem is imposed by the sentence

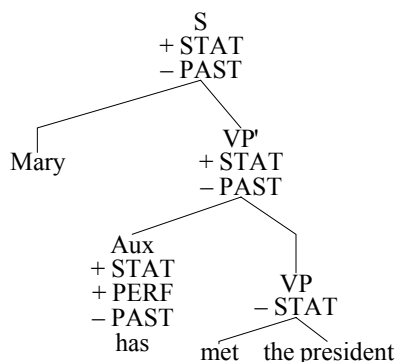
- (31) Mary has lived in Amsterdam since 1975.

We have to analyse it and we have to account for the fact that **since 1987** is a perfect level adverbial, which cannot be combined with other tenses than perfect tenses. **What is precisely the problem?**

6.2. Present Perfect and *for*-phrases

Let us start with simple sentences in the present perfect. Omitting the S'-node, the syntactic structure of (24) is this:

- (32)



K & R maintain that the present perfect invariably has a resultative meaning whereas the past perfect ambiguously expresses the resultative perfect and the relative past. Evidence for this view comes from the ungrammaticality of (29b). The adverbial **for 3 hours** cannot modify the result state because “we know of no case where a **for**-phrase can be used as characterising the result state described by a perfect.” (p. 587). One might think that the adverbial could modify the tenseless VP. This, however is not possible for properties of events. Therefore the sentence is out.

We obtain a good sentence if the VP embedded under **has** is stative:

(33) Mary has lived in Amsterdam for 3 years. (5.146, ambiguous)

The sentence is ambiguous between a U-perfect and an E-perfect reading. From the preceding considerations it follows that the **for**-phrase cannot modify the result state. Hence one would think that one of the structures of this sentence is this:

(34) Mary has [_{VP}[_{VP} lived in Amsterdam] for 3 years]

This structure could be used for the analysis of the extended now reading. But what would the structure for the existential reading be? We know from the preceding discussion that the **for**-phrase cannot modify the result state. Therefore, the **for**-phrase cannot attach to the AUX-phrase, i.e. to VP'. K&R assume that the adverb is a possible argument of the perfect auxiliary HAVE and is introduced by an extra syntactic rule CR.HAVE.Adv (p. 590). Similarly, they do not assume the structure (34) for the XN-reading, but they assume that a special rule CR.VP.PP introduces the **for**-phrase as an extra argument of the verb. The two structures are these:

(35) a. Mary [_{VP'} has [_{VP} [_vlived] [_{PP}in Amsterdam] [_{PP}for 3 years]]] E-reading
 b. Mary [_{VP'} has [_{VP} lived in Amsterdam] [_{PP}for 3 years]] U-reading

The E-reading can be paraphrased as: “the speech time is part of the result state of an event that is *the end* a state that is a living of Mary in Amsterdam for three years”. And the U-reading can be expressed as: “the speech time is part of the result state of an event that is the *beginning* of a state that is a living of Mary in Amsterdam for three years and this state still holds at the speech time”.

The two rules CR.HAVE.Adv¹ and CR.VP.PP are rather tortuous as one may expect from the formulation. To give an idea of the complications, consider K&R's analysis of (35a/b):

(36) The effects of CR.HAVE.Adv and CR.VP.PP

¹ Rule CR.HAVE.Adv on p. 590 contains a misprint. We have to replace the condition PP(t) by PP(mt). Furthermore, the rule is not general enough because it doesn't cover the pluperfect, which can have an “extended then” reading as well: *Mary had lived in Amsterdam for three years*. In order to generalise the rule, we have to replace the condition $e' \leq n$ by $e' \leq t$.

5.157:

ntsxs'e mt			
t = n			
s o t			
Mary(x)			
e = beg(s')			
e > < s			
three years(mt)			
dur(s') = mt			
s':x live in Amsterdam			
¬ <table border="1"><tr><td>e'</td></tr><tr><td>e' ≤ n</td></tr><tr><td>e' = end(s')</td></tr></table>	e'	e' ≤ n	e' = end(s')
e'			
e' ≤ n			
e' = end(s')			

5.158

ntsxs'e mt
t = n
s o t
Mary(x)
e = end(s')
e > < s
three years(mt)
dur(s') = mt
s':x live in Amsterdam

The first DRS represents the E-reading and the second one represents the U-reading. Note first that the semantic relation of the **for**-phrase and the VP is the same in both cases. The adverbial says that the state expressed by the VP has the duration of three years. The conditions $e = \text{beg}(s')$ versus $e = \text{end}(s')$ are contributions of the respective rules. One would think that the choice of the condition is determined somehow by the syntax of the **for**-phrase: the U-reading has the **for**-phrase higher in the syntax. But there is no reason for the choice. We could have stated the conditions exactly the other way round. So these rules have the flair of complete arbitrariness. This is my first criticism.

I have to add that the condition that the state expressed by the VP still holds at the reference time, which we need for the extended now reading, is simply stipulated by the CR.HAVE.Adv rule. This criticism extends to K&R's treatment of the "pure present perfect", i.e. a perfect without an adverbial of duration.

(37) Mary has lived in Amsterdam.

As K&R correctly observe, this only has the E-reading, and they formulate the rule CR.HAVE, which accounts for the construction, accordingly (cf. p. 589). There is no explanation of why this should be so. If the construction had a XN-reading, we could have written the rule differently. This is my second criticism.

The third criticism is of conceptual nature. K&R's theory of aspects classifies states as eventives without culmination point. The PERFECT aspect, however, needs an eventive with culmination point by definition. In order to apply the PERFECT to states, they have to say that both the beginning and the end of a state is marked by an event. To be sure, they do not say that these events belong to the aspectual structure of the state. These events are different entities. But it amounts to the same. The events in questions are precisely the endpoints of a particular state.

This is tantamount saying that they belong to the state. It seems to me that this undermines the theory of aspectual schemes. States should not have a result state in this theory

6.3. *Present Perfect and **since**-phrases*

Next consider K&R's analysis of **since**-PPs. K&R remind us of the well known fact that **since**-phrases are perfect level adverbials. If they modify a verb in a non-perfect tense, we face an ungrammaticality;

- (38) a. *Mary lives in Amsterdam since 1975. (= 5.209)
 b. *Mary lived in Amsterdam since 1975.
 c. *Mary will live in Amsterdam since 1975.

With statives a phrase of the form **since** α gives an extended now reading: the state described by the VP starts at α and continues up to reference time. K&R give the following examples:

- (39) a. Mary has lived in Amsterdam since 1975. (= 5.210)
 b. Mary had lived in Amsterdam since 1975.
 c. Mary will have lived in Amsterdam since 1975.

If **since**- α modifies a VP describing an event, the event has to occur after α . K&R illustrate the point by the following sentences:

- (40) a. Since last summer Mary has moved to Paris. (= 5.214)
 b. Messiaen has died since the beginning of this month.
 c. Since eight o'clock I have written ten letters.
 d. Since the beginning of April Mary has written only one paper.

If we interpret the Perfect as giving us an extended now XN, it is very simple to describe what is going on here. The readings in question are these:

- (41) a. $\exists t[\text{XN}(t,n) \ \& \ \text{Mary live in Paris at } t \ \& \ t \text{ is since } 1975]$
 b. $\exists t[\text{XN}(t,n) \ \& \ t \text{ is since last summer} \ \& \ \exists e[e \subseteq t \ \& \ e: \text{Mary move to Paris}]]$

The analysis is parallel to the one sketched for **for**-phrases in section 1. Under this analysis **since** α means the same as **from** α but the former selects a perfect whereas no such restriction holds for the latter. This simple analysis is not possible under K&R's theoretical settings. So let us consider their analysis. It is a rather complicated one.

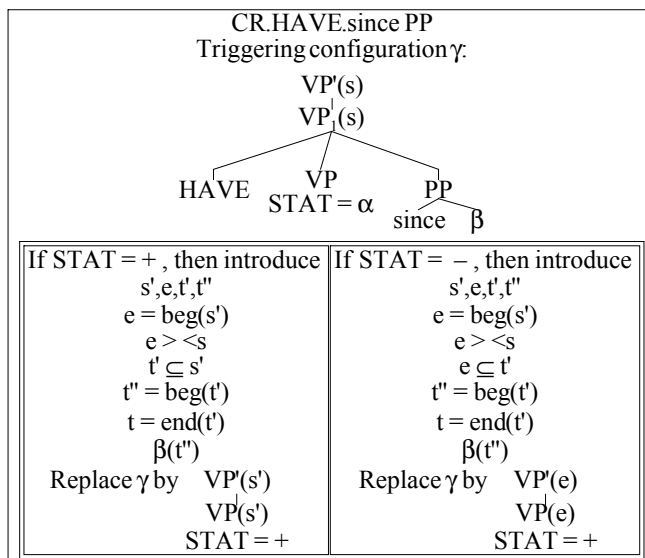
K&R do not indicate a syntactic rule for **since**-PPS. They say that the formulation of a construction rule is obvious from their description of **since** on p. 632:

(5.215)

...since α serves to characterize the state s described by a clause in a perfect tense. **Since** α characterizes s indirectly, viz. by characterizing the location time t' for the eventuality described by the underlying non-perfect verb phrase. It describes this location time as beginning at the denotation of α and as ending with, and including the location time t for the state s . If the underlying verb phrase is stative, then s is the result of the onset of the state s' characterized by the VP; if the underlying VP is non-stative, then s results from the described event.

Since-phrases are the classical adverbial that introduce extended now readings. Since these readings are described by the CR.HAVE.Adv rule, which has the Adverb as a sister of the embedded VP, I presume that the relevant rule operates on an analogous triggering configuration. The rule in question would then be something like this:

(42)



To see what this rule amounts to, consider the DRS for (39a). It is very similar to (5.216) on p. 632:

(43) Mary has lived in Amsterdam since 1975

n t s s' e t' t'' x y
t = n
s o t
e = beg(s')
e > < s
t' ⊆ s'
t'' = beg(t')
t = end(t')
1975(t'')
Mary(x)
Amsterdam(y)
s': x live in y

The very simple idea that Mary lives in Amsterdam at an interval that starts with 1975 and ends with the speech time has to be expressed in this tortuous way for a number of reasons.

1. One would think that the state described by the VP is the one that holds as well at the speech time. But this is not so. The Perfect expresses a result state. And this result has to be the result of an event. By stipulation this event is the beginning of the state s' described by the tenseless VP.

2. A second complication arises from the fact the event cannot be described directly by the property 1975 because this is a property times and not of events. Therefore a new time t' is introduced and it is said that 1975 characterises the beginning of t' . It is said that this time finishes with the reference time t , which happens to be the speech time. Since the time t' is included in the state described by the VP, the VP-state may be longer than t .

It is instructive to compare this analysis with an extended now approach. The comparison reveals the unwarranted complications of the K&R approach.

(44) U-Perfect: K & R versus XN

K&R	XN – analysis
n t s s' e t' t'' x y	n t t' t'' x y
t = n	t = n
s o t	t'' = beg(t')
e = beg(s')	XN(t',t)
e > < s	t'' = beg(t')
t' ⊆ s'	t = end(t')
t'' = beg(t')	1975(t'')
t = end(t')	Mary(x)
1975(t'')	Amsterdam(y)
Mary(x)	t': x live in y
Amsterdam(y)	
s': x live in y	

The extended now approach gets rid of the stipulated event e and the additional state s' . If we identify states with times (Herweg 1991; Katz 1997), we get rid of states altogether. The XN-

analysis is certainly simpler and the more complicated approach could be justified only if the extra parameters e , s , and s' buy anything. So far, this is not the case.

Next, let us compare K&R's analysis for the E-Perfect with an XN-analysis:

(45) The E-Perfect: K&R versus XN

Since last summer Mary has moved to Paris.

K&R	XN – analysis
$n\ t\ s\ s'\ e\ t'\ t''\ x\ y$	$n\ t\ t'\ t''\ x\ y$
$t = n$	$t = n$
$s\ o\ t$	$XN(t', t)$
$e > <_s$	$e \subseteq t'$
$e \subseteq t'$	$t'' = \text{beg}(t')$
$t'' = \text{beg}(t')$	$t = \text{end}(t')$
$t = \text{end}(t')$	$\text{last summer}(t'')$
$\text{last summer}(t'')$	$\text{Mary}(x)$
$\text{Mary}(x)$	$\text{Amsterdam}(y)$
$\text{Paris}(y)$	$e: x\ \text{move to } y$
$e: x\ \text{move to } y$	

If we abstract from the extra complications due to the introduction of states we see that the two analyses are virtually identical in this case. We note an odd asymmetry however with respect to the treatment of statives. When the VP expresses a state, K&R introduce an event that marks the beginning of the state and the since-PP measures the length from that beginning up to now.

3. In analogy to the treatment of **for**-phrase for properties of events, we should expect that the **since**-phrase marks the *end* of the event described by the VP, in other words, we should be in the result state of a moving to Paris by Mary since last summer. This however is not so. The event is in the **since**-interval. In other words, **since**-phrases cannot be treated in a parallel way to **for**-phrase, and we need an extra syncategorematic rule for them. Footnote 66 on p.632 shows that K&R are aware of this problem:

If the underlying VP is non-stative, however, there remains a problem. If the **since**-phrase is reinterpreted as characterizing the location time of the result state, then we would expect that this result lasted for at least as long as the **since**-phrase indicates. But as we have seen, normally this is not so. We do not know how this apparent contradiction is resolved.

An XN-approach can treat **for**-phrases and **since**-phrases in a parallel way. The only stipulation we need is that **since**-phrases select an XN, i.e. they are perfect level interval. Everyone admits that this selection restriction is necessary.

4. Although more than three criticisms are suspicious because we can remember at best

three, I will add a fourth one. The analysis is not general enough because it falsely predicts that present perfect sentences with embedded stative VPs are not ambiguous. Consider the following counterexamples:

- (46) a. Cathrine has been in Oslo since 1998. (U/E)
 b. Cathrine has been to Oslo since 1998. (E)

The first sentence is ambiguous between a U-perfect and an E-perfect. For some reasons, the second sentence even only has the E-reading (Graham Katz, p.i.). But the E-reading is a problem for K&S. I guess they have to say that “be in Oslo” doesn’t express a state in this context but an event. The XN-theory hasn’t the slightest problem here. We can represent the ambiguity in the following way:

- (47) a. $\exists t[\text{XN}(t,n) \ \& \ \text{Cathrine be in Oslo at } t \ \& \ t \text{ is since } 1998]$
 b. $\exists t[\text{XN}(t,n) \ \& \ t \text{ is since } 1998 \ \& \ \exists t' [t' \subseteq t \ \& \ \text{Cathrine be in Oslo at } t']]$

My conclusion is that the analysis of the HAVE-perfect as an aspectual result operator is not correct. The XN-analysis is to be preferred. To be sure, I do not want to dispute that there is a PERFECT operator that gives us the result state of an action. This operator is used for the analysis of stative passives such as:

- (48) The lawn is mowed.

This construction may, however, not be confused with the HAVE-perfect. It differs from it both in syntax and semantics. For an analysis, see (Kratzer 1994; Rapp 1998; Stechow 1999) and many others. This means something like “The lawn is cut as the result of an abutting mowing”. So this is a resultative construction. Interestingly, this predicate cannot be modified by a **since**-phrase in English, whereas it can in German:

- (49) a. *The lawn is mowed since 9 AM.
 b. Der Rasen ist seit 9 Uhr gemäht.

Again this shows that the English HAVE-perfect is not a resultative construction since it tolerates **since**-phrase.

7. THE PAST PERFECT

The present perfect is a deictic tense. Therefore, no ambiguity arises in the K&R system. The past

perfect, however, exhibits a fourfold lexical ambiguity in K&R's system. The past is ambiguous between a deictic and an anaphoric tense. Both tenses may embed a semantic PERFect. The deictic past is only compatible with a semantic perfect. The anaphoric past may carry the = or the < relation. The latter one is compatible with an embedded stative or an embedded event. This is rather complicated and demands examples.

- (50) 1. Fred arrived at 10. (= 5.161)
 2. He had got up at 5;
 3. he had taken a long shower,
 4. had got dressed
 5. and had eaten a leisurely breakfast.

This is a so-called extended flashback. The tense of sentence (50.1) has the features –PAST, past. The pluperfects other sentences all have the feature +PAST, past. +PAST is interpreted as the same TPpt, viz. the event introduced by the first sentence. But each of these sentences has a different TRpt, namely the event introduced by the preceding sentence.

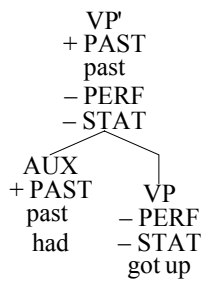
Skipping over immaterial details like discourse referents, the DRSs for the first 4 sentences are these (cf. p. 608):

- (51) 1. $t_1 < n, e_1 \subseteq t_1$, at 10(t_1), e_1 : Fred arrive -PAST, past, -STAT, -PERF
 2. $t_2 < e_1, e_2 \subseteq t_2$, at 5(t_2), e_2 : Fred get up +PAST, past, -STAT, -PERF
 3. $t_3 < e_1, e_3 \subseteq t_3, e_2 < e_3, e_3$: Fred get dressed “
 4. $t_3 < e_1, e_4 \subseteq t_4, e_3 < e_4, e_4$: Fred have a leisurely breakfast “

The contribution of the feature +PAST, past is the information $t_3 < e_1$ for the sentences (51.2-4). The representations reveal that this use of the past perfect is purely anaphoric because no link to the speech time n is involved. It comes about indirectly via the anaphoric relation to the event introduced by the first sentence.

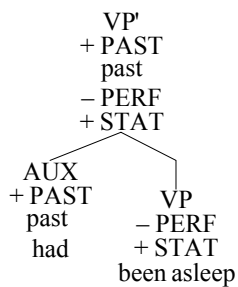
The information $e_2 < e_3$ and $e_3 < e_4$ in the last two sentences are introduced by temporal reference points. Here is the VP'-structure for the examples:

- (52) Pluperfect as anaphoric past



I have not found an example in K&R's book that illustrates the feature combination +PAST, past, -PERF, +STAT. The following sentence may be one:

- (53) Pluperfect as anaphoric past
- a. John had been asleep at 5.
 - b. $t < e_1$, at 5(t), $s \subseteq t$ & s: John asleep
 - c.



In the two preceding examples, the pluperfect did not express a semantic PERFECT. It was simply a relative past. The anaphoric simple past is illustrated by the second sentence in the following text, which was mentioned earlier.

- (54) Mary had been unhappy in her new environment for more than a year. (= 5.163)

But now she felt at home. +PAST pres +STAT -PERF

The feature combination +PAST pres may be combined with a semantic PERFECT as well, as exhibited by the third sentence of the following text:

- (55) a. Mary was content. (= 5.170)

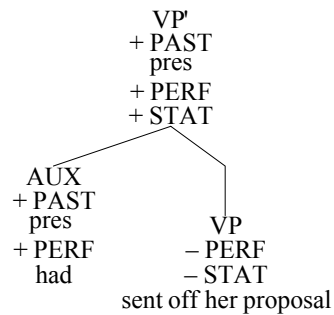
$t_1 < n$, $s_1 o t_1$, s_1 : Mary be content

The past two days had been strenuous.

But now she had sent off her proposal. +PAST pres +PERF +STAT

b. $t_2 = t_1$, $s_2 o t_2$, $e_2 \gg s_2$, e_2 : Mary send off her proposal

c.



I am not aware of an example for the feature bundle -PAST, past, +PERF, +STATE. The following two sentences presumably carry them.

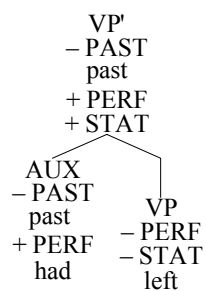
(56) a. When Mary came home, Bill had left.

b. At 10, Bill had left.

Here is the analysis for the second sentence.

(57) Pluperfect as deictic past PERFECT

$t < n$, at 10(t), $e \gg t$, e : Bill leave -PAST, past, +PERF, +STATE



Here is a final overview of the possible feature combinations for the past perfect:

(58)

Ppt	TENSE	PERF	STAT
+PAST	past	-PERF	-STAT

+PAST	past	-PERF	+STAT
+PAST	pres	+PERF	+STAT
*+PAST	pres	+PERF	-STAT
-PAST	past	+PERF	+STAT
*-PAST	past	+PERF	+STAT

The combinations +PERF –STAT are excluded by the semantics of the PERFECT, because this gives us a state by definition.

8. LOCATING ADVERBIALS

It is interesting to see how temporal adverbs interact with the perfect. Here I will comment on locating adverbials such as **at 5** or **on Sunday**. Intuitively, one would think that the salient readings of the sentences

- (59) a. At 5, Fred had got up.
 b. Fred had got up at 5.

are distinguished in terms of scope. One would think that the locating adverb has wide scope with respect to the perfect operator in (59a) whereas it is ambiguous in sentence (59b). In fact, most scholars working about the perfect have assumed this (Fabricius-Hansen 1986; Mittwoch 1988; Herweg 1991; Musan 1998) and many others. The same holds for measure adverbials (Hitzeman 1997).

In K&R's system, the different readings are not distinguished structurally. The difference comes from a lexical ambiguity. We have seen that the VP' in (59a) has the features –PAST, past, +PERF, whereas it has the features +PAST, past, -PERF. This amounts to the claim that we have different auxiliaries *had*. In fact, K&R have four of them, each one corresponding to one of the feature combinations we have discussed in the preceding section (cf. the lexical rules LI 32, LI 46, and LI 47 on page 686 f; LI 47 is a combination of two rules). Each entry has a different semantics.

Since the features have a constant meaning, one has the impression that some generalisation is hidden behind this treatment. Consider the sentences (59). Note first that the same ambiguity arises with German, a language that doesn't have an auxiliary expressing the English XN.

- (60) a. Fritz war um 5 Uhr schon aufgestanden.
 b. Fritz war schon um 5 Uhr aufgestanden.

The particle **schon** disambiguates the two readings. In (60a), 5 o'clock is after the getting up whereas it is the time of the getting up in (60b). Without **schon** the sentence is ambiguous. This fact alone makes it dubious that the ambiguity involved here is a lexical one.

9. A SCOPE ACCOUNT

Here is my sketch of a theory in terms of scope. (This section needs to be rewritten.)

Tenses are free variables that are existentially bound in an appropriate domain, i.e. the highest CP-node not separated by an LF-barrier (quantifier or negation; see (Beck 1996)). Tenses carry the presuppositions that they are related by one of the semantic relations =, >, < to n. The presupposition is written as “/& t < n”, where t is the tense variable in question. Similarly for the other tenses.

- (61) Tense
- a. **Past** := $\lambda t \lambda P [P(t) / \& t < n]$
 - b. **Fut** := $\lambda t \lambda P [P(t) / \& t > n]$
 - c. **Pres** := $\lambda t \lambda P [P(t) / \& t = n]$

Following (Kratzer 1978) I will express temporal and event anaphor by typically invisible anaphoric adverbs DA(e) and DANN(e), of which the first expresses overlap with e and the second expresses posteriority with respect to e. The English adverb **then** doesn't differentiate between the two readings.

- (62) DA := $\lambda e \lambda P \lambda t [e \text{ O } t \ \& \ P(t)]$
 DANN := $\lambda e \lambda P \lambda t [t > e \ \& \ P(t)]$

The first argument of the adverb, i.e., e is an eventive, i.e. an event or a time. With (Katz 1997) I reject states. For the time being I will assume that one reading of the HAVE-perfect is just anteriority. In English, HAVE may also express XN.

- (63) Perfect

- a. HAVE := $\lambda t \lambda P \lambda t' [t < t' \ \& \ P(t)]$
 b. XN := $\lambda t \lambda P \lambda t' [t' \text{ is a final part of } t \ \& \ P(t)]$

Consider the following text now:

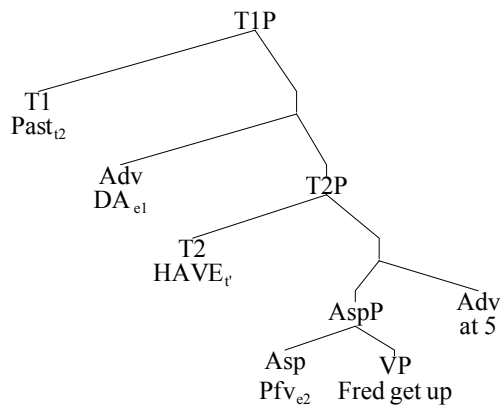
- (64) 1. Fred arrived at 10.
 2. He had got up at 5.
 3. At six he had left his place.

These are represented as:

- (65) 0. $\exists t_1 e_1 t_2 t' e_2 t_3 t'' e_3$
 1. **Past_{t1} at 10 Pfv_{e1} Fred arrive**
 (= at 10(t₁) & e₁ ⊆ t₁ & e₁: **Fred arrive** /& t₁ < n)
 2. **Past_{t2} DA(e₁) HAVE_{t'} at 5 Pfv_{e2} Fred get up**
 (= t₂ O e₁ & t' < t₂ & at 5(t') & e₂ ⊆ t' & e₂: **Fred get up** /& t₂ < n)
 3. **Past_{t3} at 6 HAVE_{t''} Pfv_{e3} Fred leave his place**
 (= at 6(t₃) & t'' < t₃ & e₃ ⊆ t'' & e₃: **Fred leave his place** /& t₃ < n)

Here is a transparent LF for the second sentence:

(66)



I have been following common practice in calling the operation that hooks up the event described by the tenseless VP **aspect**; cf. e.g. (Klein 1994). I call the relation of inclusion **Perfective (Pfv)**. Here are the missing meaning rules.

- (67) a. **Pfv** := $\lambda e \lambda P \lambda t [e \subseteq t \ \& \ P(e)]$

b. **at 5** := $\lambda P\lambda t[at\ 5(t) \ \& \ P(t)]$

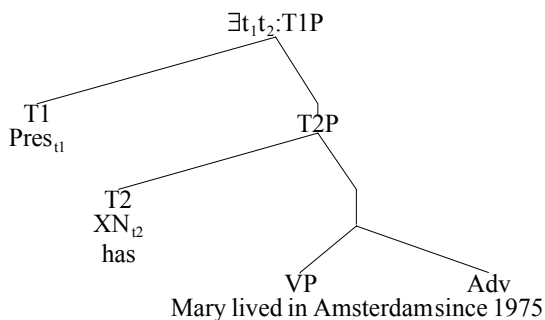
Note that the semantic composition of the tree (66) is entirely in terms of functional application. There is non-compositionality in so far as the free variables are bound at the text level. For the purposes of this paper, the text recursion may be generated by the rule

- (68) a. $TP \rightarrow TP\ K$
 b. $K \rightarrow .\ TP$

. is interpreted as conjunction and the free variables are existentially bound as high as possible. As we said, negation is a barrier for LF-binding, and the negation is situated between TP1 and AspP. This might cause syntactic problems, because there is evidence that surface negation may be above TP2 (Zanuttini 1991). The problem is addressed in (Stechow 1999).

It is a consequence of this system that **since**-phrases have scope under the XN-perfect; cf. also (Rathert 1999). In other words, the selection of the XN-projection is upwards, not downwards. In other words, sentence (9) has the structure:

(69)



The VP expresses a property of times and can be predicated of the XN-interval t_2 directly. The E-readings comes about if we aspectualise the VP by Pfv or by and adverb of quantification such as twice:

(70) Mary has been in Amsterdam twice since 1975.

This has the reading: There are two maximal Mary-be-in-Amsterdam intervals in XN and XN starts in 1975. **For**-phrases are treated along the same lines.

I don't want to discuss the question whether the English HAVE-perfect only has the XN-meaning as (Anagnostopoulou, Iatridou, and Izvorski 1997) assume. For the time being, I will assume a lexical ambiguity her. The German perfect has a somewhat different meaning. It

expresses the relation $|<$ meaning “before or abutting”; cf. (Musan 1998; Paslawska and Stechow 1999).

Finally, I have to add that the German preposition **seit** has slightly different meaning from the English **since**: **seit** introduces an XN-interval and **since** modifies one.

- (71) a. **since**(t)(P)(t') iff $\text{beg}(t') = t \ \& \ P(t')$; checks XN
 b. **seit**(t)(P)(t') iff $P(t') \ \& \ \exists t''[t' \text{ is a final part of } t'' \ \& \ P(t'')]$

The consequence of this semantics is that each of the following German sentences is a good one:

- (72) a. Doro hat seit 1975 in Amsterdam gewohnt.
 b. Doro wohnte seit 1975 in Amsterdam.
 c. Doro wohnt seit 1975 in Amsterdam.

Note that (72) does not have an XN-reading. The adverbial **seit 1975** must be in the scope of HAVE and the resulting interpretation is equivalent with the simple past statement (72b). The equivalent of the English present perfect sentence is (72c).

Note incidentally that this treatment is compatible with K&R's treatment of the present as identity with n. In the literature on German tense we very often read that the present expresses an interval which can be very large, provided it includes the speech time (Fabricius-Hansen 1986). If this were so, the present could express an extended now. But the following sentences are problematic for this claim:

- (73) a. Mary has lived in Paris for 3 years.
 b. ??Maria wohnt drei Jahre lang in Paris.
 c. ?Maria wohnt schon drei Jahre lang in Paris.
 d. Maria wohnt seit drei Jahren in Paris.

If the present itself could express XN, (73b) should be possible, but it is very odd. (73c) is much better, and (73d) is perfect. I conclude that XN is introduced by the adverbial **seit drei Jahren**, and **schon drei Jahre lang** must basically mean the same.

The account sketched here could be reformulated directly in term of DRT. In fact, it is an DRT-account in a slightly different notation. If I criticised K&R then this criticism concerned only their special treatment of the perfect. The general treatment of tense and temporal anaphor is sound and it is conserved in my proposal.

 REFERENCES

- Anagnostopoulou, Elena, Sabine Iatridou, and Roumyana Izvorski. 1997. On the Morpho-Syntax of the Perfect and How it Relates to its Meaning. City: MIT. Manuscript.
- Beck, Sigrid. 1996. Wh-constructions and transparent Logical Form. Unpublished Ph.D. dissertation., Tübingen.
- Dowty, David. 1979. *Word Meaning and Montague Grammar, Synthese Language Library*. Dordrecht: Reidel.
- Fabricius-Hansen, Cathrine. 1986. *Tempus fugit*. Düsseldorf: Schwann.
- Herweg, Michael. 1991. Perfective and imperfective aspect and the theory of events and states. *Linguistics* 29:969-1010.
- Hitzeman, Janet. 1997. Semantic Partition and the Ambiguity of Sentences Containing Temporal Adverbials. *Natural Language Semantics* 5 (2):87-100.
- Kamp, Hans , and Uwe Reyle. 1993. *From Discourse to Logic*. Dordrecht/London/Boston: Kluwer Academic Publisher.
- Katz, Graham. 1997. Against underlying states. Paper read at Twelfth Meeting of the Israeli Association of Theoretical Linguistics, at Jerusalem.
- Klein, Wolfgang. 1992. The Present Perfect Puzzle. *Language* 68.3:525 - 551.
- Klein, Wolfgang. 1994. *Time in Language*. London and New York: Routledge.
- Kratzer, A. 1978. *Semantik der Rede. Kontexttheorie - Modalwörter - Konditionalsätze*. Kronberg/Ts.: Scriptor.
- Kratzer, Angelika. 1994. The Event Argument and the Semantics of Voice. City: UMass, Amherst. Manuscript.
- McCoard, R.W. 1978. *The English Perfect: Tense Choice and Pragmatic Inferences*. Amsterdam: North-Holland Press.
- Mittwoch, A. 1988. Aspects of English Aspect: On the Interaction of Perfect, Progressive and Durational Phrases. *Linguistics and Philosophy* 11:203-54.
- Musan, Renate. 1998. The core semantics of the present perfect. *ZAS Papers in Linguistics* 10:113 - 145.
- Paslawska, Alla, and Arnim von Stechow. 1999. Perfekt- und Futurkonstruktionen im Ukrainischen und Russischen. City: Institut für Sprachwissenschaft. Universität Tübingen. .

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- Pickbourn, J. 1789. *A Dissertation of the English Verb: Principally intended to Ascertain the meaning of its Tenses.*
- Rapp, Irene. 1998. Zustand? Passiv? — Überlegungen zum sogenannten "Zustandspassiv". *Zeitschrift für Sprachwissenschaft* 15.2:231 - 265.
- Rathert, Monika. 1999. Einfache Temporalitätsphänomene. Die Kompositionalität von Tempus (Perfekt) und Temporalitätsadverbien (*bis* und *seit*) in geraden Kontexten. MA Thesis, Seminar für Sprachwissenschaft, Universität Tübingen, Tübingen.
- Reichenbach, Hans. 1947. *Elements of Symbolic Logic*. Berkeley: University of California Press.
- Schiporeit, Luise. 1971. *Tenses and Time Phrases in Modern German*. München: Max Hueber Verlag.
- Stechow, Arnim von. 1999. German Participles II in Distributed Morphology. City: . To appear in the volume of Bergamo 1998 conference on tense and aspect.
- Zanuttini, Raffaella. 1991. *Syntactic Properties of Sentential Negation: A Comparative Study of Romance Languages*, University of Pennsylvania, Philadelphia.