

Perfect of result

The perfect of result is expressed by the adjectival passive (“Zustandspassiv”) and occasionally by active constructions.

- (1) a. Die Bibliothek ist seit 9 Uhr geöffnet.
the library is since 9 o'clock opened
- b. Wolfgang hat Diano seit Freitag verlassen.
Wolfgang has Diano since Friday left

Wunderlich (1970) observes that the perfect of result requires a transformative verb, i.e. an accomplishment/achievement. So these aktionsarten must have a logical type that enables us to derive this generalisation. In this section **we** discuss how this can be done.

The most promising proposals for a theory of the perfect of result that I am aware of have been made in Kratzer (1994, 1996, 2000). I will follow her suggestions with one important modification: accessible resultant states will not be particular events/states as assumed by Kratzer but rather properties of states/times. Kratzer’s theory has undergone some changes for the last years, which I will briefly review here. One important feature has been retained: the “external” argument of a verb is not generated in the VP but introduced by a separate head called Voice. In view of examples such as (1b) where the external argument figures in the resultant state, this position is presumably exaggerated and I will not take it as an inviolable principle.

In Stechow (1996b) I tried to adapt Kratzer’s idea to a somewhat modified version of Dowty’s (1979) theory of decomposition. The intransitive construction

- (2) Das Fenster öffnete sich wieder.
The window opened again

had two analyses, the “repetitive” one and the “restitutive” one.

- (3) a. PAST_i PFV λ_e BECOME_e **again** open(the window)
- b. PAST_i PFV **again** λ_e BECOME_e [open(the window)]

For convenience, I give the meaning for the functional adverb *again*.

- (4) **again** [official version]
again is of type $\langle it, it \rangle$ or $\langle vt, vt \rangle$. **again**(P)(e) is true if $P(e) \wedge \exists e' [\tau(e') < \tau(e) \wedge P(e')]$, where e is a time or an event, and v is the type of events.

The two LFs in (3) differ only in as much as *again* has narrow scope with respect to BECOME in the first LF but wide scope in the second LF. BECOME_e(P) means that P is false of LB(e) and P is true of RB(e), i.e. of the beginning and the end of the event e, respectively. P is undefined for any interval between these two points. **again**(P)(e) means that P is true of e with the presupposition that there was an e' before e such that P(e'), where e is either an event or a state/time.¹ So this is a mere respelling of Dowty’s theory.

A problem that has kept worrying me for years is the question of how the adjectival passive can be expressed in this framework. The following is a valid argument:

- (5) Das Fenster ist geöffnet. ‘the window is opened’
∴ Das Fenster ist offen. ‘the window is open’

And the following statement is a plain contradiction for me:

¹. More accurately, all this should be relativised to worlds. “ $\exists e$ ” means that e is located in the index world w. P(e) means that e has property P in w.

- (6) #Das Fenster ist geöffnet, aber zu.
the window is opened-partic. but closed-adj

It is desirable to derive the adjectival passive from the stem by a semantic operation which reflects the formation of the participle, which is something like $GE-T + \textit{öffn} \rightarrow ge\textit{-öffn}(e)\textit{-t}$. Suppose next that the stem of *öffn*- has the following meaning:

- (7) $open_V := \lambda x \lambda e. BECOME_e \mathbf{open}_A(x)$ (to be revised)

The index V is used to typographically distinguish the transformative verb from its resultant state, which may be thought as an adjective. In view of the preceding discussion, the meaning of the adjectival passive must be something like this:

- (8) $opened_A := \lambda x \lambda s [\mathbf{open}_A(x)(s) \& \exists e [e \succ s \& BECOME_e \mathbf{open}_A(x)]]$ (to be revised)

This applies to an x if x is $open_A$ and there is an abutting BECOMING- $open_A$ event, where the latter is presupposed, **which is indicated by the notation /&**. The problem mentioned is that this meaning cannot be derived from the stem meaning (7). The reason is that $open_V$ is a relation between individuals and events. The event e is the becoming and the individual x is the thing that undergoes the change. What the adjectival passive predicates of the undergoer is not the becoming but the result state of the becoming, i.e. the property $open_A$. This property, however, is not recoverable from the relation expressed by the stem.

To deal with results, Kratzer (1994) took the notion of resultant state as a primitive and formalised accomplishment verbs directly in terms of resultant states. The VP *open the window* would then have the following analysis:

- (9) Kratzer (1994):
 $[_{VP} \textit{das Fenster öffnen}] = \lambda e. \mathbf{open}(\textit{the window})(f_{\textit{result}}(e))$

$f_{\textit{result}}$ is a function that assigns its resultant state to each event. In Stechow (1996c), I objected to this analysis on the grounds that it cannot represent restitutive readings arising with *again*: it is not possible to have the truth condition (3a) for sentence (2) because Kratzer's VP is a set of events with no accessible resultant state. Kratzer can only have the repetitive reading, which is given by the following LF in her system:²

- (10) PAST_i IPFV $[_{VP} \textit{again} \lambda_e \mathbf{open}(\textit{the window})(f_{\textit{result}}(e))]$

The reader may calculate for himself that this is in fact a repetition of an event. In Kratzer (1996:4.6), the need for decomposition in the syntax seems to be admitted for such examples. Kratzer introduces a head *Affix*.

- (11) $\mathbf{Affix} := \lambda P \lambda e \exists s. P(s) \& s = f_{\textit{result}}(e)$

Affix is an "eventizer": it transforms a property of states into a property of events, exactly as my version of Dowty's BECOME. In fact, *Affix* means more or less the same as BECOME. The decomposition of the VP *das Fenster öffnen* is now the following:

- (12) $[_{VP} \mathbf{Affix} [_{AP} \textit{das Fenster öffnen}]]$
 $= \lambda e \exists s. \mathbf{open}(\textit{the window})(s) \& s = f_{\textit{result}}(e)$

Since the decomposition is carried out in the syntax now, we have a docking site for the adverb *again* and can represent the restitutive reading of example (2) by means of the following VP:

- (13) A restitutive VP
 $[_{VP} \mathbf{Affix} [_{AP} \textit{again} [_{AP} \mathbf{open}(\textit{the window})]]]]$

² Her actual representation is a bit different, it involves Parsons' (1990) thematic relation HOLDER(s)(x), which means that x is the holder of state s.

A consequence of this approach is that the lexical entry (9) cannot be maintained, and at least some transformative verbs have to be decomposed in the syntax.³ So this approach is virtually indistinguishable from the one given in (Stechow 1996b) for active sentences.

Next, let us look at the adjectival passive.

- (14) Das Fenster ist wieder geöffnet. (only restitutive)
the window is again opened

The prevailing reading – for me the only reading – of this is the restitutive one: the window is open as the result of a becoming-open event, and it had been open before. It is not presupposed that there had been such an event before.

Adjectival passives are expressed by a “perfectizer” $PERF_K$ in Kratzer (1994):

- (15) Kratzer’s (1994) perfectiser (to be revised)
 $PERF_K = \lambda P \lambda s \exists e. P(e) \ \& \ s = f_{res}(e)$

This operator converts a participial phrase into an adjectival participle, say, something of the category AP. So the structure of the predicative AP before raising of the subject is this:⁴

- (16) $[_{AP} PERF_K [_{PartP} \text{das Fenster geöffnet}]]^5$

If we assume the same analysis as in (9), the meaning of the AP is $\langle \lambda s \exists e [\text{open}(\text{the window})(f_{result}(e)) \ \& \ s = f_{result}(e)] \rangle$. This property applies to a state if it is the resultant state of an opening of the window, the result wanted. If we try to analyse (14) by means of these techniques, we see that we do not get what we want. To be concrete, the analysis predicted by the theory does not give us the restitutive reading but a particular repetitive one:

- (17) We obtain:
a. $PERF_K \text{ again}(\lambda e. \text{open}(\text{the window})(f_{result}(e)))$
‘The window is in the resultant state of another opening of it’
b. $\text{again } PERF_K (\lambda e. \text{open}(\text{the window})(f_{result}(e)))$
‘The window is again in the resultant state of an opening of it’

We want:

- c. $PERF_K \lambda e [\lambda s [\text{again}(\text{open}(\text{the window}))](f_{result}(e))]$
‘The window is in the resultant state of an opening of it, and it had been open some time before the event’

We have seen that we can derive (17c) only if we decompose the verb in the syntax, i.e. we have to represent the adjectival participle as

- (18) $[_{AP} PERF_K [_{VP} \text{Affix } [_{AP} \text{again } [_{AP} \text{open}(\text{the window})]]]]$

A bit of reflection shows that this is the correct meaning.⁶

It is interesting to see how this relates to the classical decomposition analysis. Recall that we have given the meaning of the adjectival participle in (8). The problem was that we wanted to predicate the state $open(x)$ embedded under BECOME of the resultant state, but this was not possible if we represented the verb *öffnen* in the classical way as BECOME $open(x)$ or even as a structure where the state is embedded under CAUSE, the standard representation. In Rapp and Stechow (2000) we tried to solve the problem by defining an operator RESCBECOME (“the result of a becoming”), which operated directly on the stative AP-root of the transformative verb. The rule said that the AP-state was the result of a becoming and it

³ Kratzer calls verbs that have that are described via their resultant state “perfective”. Perfectivity in this sense characterises Vendler’s accomplishments/achievements. This sense must not be confused with our and Klein’s use of PERFECTIVE, a term that refers to an aspectual relation.

⁴ In fact, the subject is presumably a controlled PRO as Kratzer has argued.

⁵ For syntactic details, see Kratzer (1996) and Rapp (1997).

⁶ The property expressed turns out to be $\lambda s \exists e [\exists s' [s' = f_{res}(e) \ \& \ \text{open}(\text{the window})(s') \ \& \ [\exists s^* [\tau(s^*) < \tau(s') \ \& \ \text{open}(\text{the window})(s^*)]] \ \& \ s = f_{res}(e) \ \& \ \text{open}(\text{the window})(s)]]$.

held of the time directly following the becoming event. Obviously, this method is not very elegant.

If we try to localise the source of the problem, then the following diagnostic seems adequate. Adopting Dowty's (1972) Aspect Calculus, each aspectual class is either a property of states/times or a property of events; there is no aspectual class that is a relation between events and states/times. The conclusion I have been drawing in a number of papers is that we need decomposition in the syntax in order get the modification by means of functional adverbs (*again* and *almost*) right. The result is a rather abstract syntax in the style of Generative Semantics (see, for example, McCawley 1971). If we do not want to accept the conclusion, we have to depart from the simple architecture of Dowty's system, and we have to complicate the entries for the verbs a bit. What Klein (1994) calls a 2-state verb is now literally a relation between two things, viz. an event *e* (the preparation phase) and a state *s* (the resultant state).⁷

Recently, Kratzer has proposed that we have to distinguish between two kinds of transformative verbs (see Kratzer 2000). There are those verbs that have an accessible resultant state and those that don't. Only the former have real perfects of result. *Öffnen* 'to open' should have an accessible resultant state. A verb like *abgeben* 'deliver' does not have an accessible result. A test to distinguish the two is the possibility for the adjectival passive to undergo modification by the aspectual particle *noch immer*:

- (19) a. Das Fenster ist noch immer geöffnet.
 the window is still always opened
 b. [#]Der Aufsatz ist noch immer abgeben.
 the paper is still always delivered

The difference in acceptability follows from a difference in lexical semantics:

- (20) Two kinds of transformative verbs (Kratzer; to be revised)
 a. **deliver** := $\lambda x \lambda e [\text{deliver}(x)(e)]$
 b. **open_v** := $\lambda y \lambda e \lambda s [\text{cause}(s)(e) \ \& \ \text{open}(y)(s)]$

Both verbs express accomplishments if combined with appropriate objects, but only the latter verb is genuinely transformative because it has an accessible resultant state, whereas the former has not. Note that there is variation among speakers: one might very well construe the verb *abgeben* 'deliver' as creating the result of being in the hand of the recipient. People who analyse the verb this way should find sentence (19b) acceptable.

The theory entails that sentences with transformative verbs must have a rather different LF from those with ordinary accomplishments. For instance, sentence (21a) is represented in the familiar way as (21b) within a Kratzerian framework:

- (21) a. Dieter gab den Aufsatz ab.
 'Dieter delivered the paper.'
 b. PAST_i PVF $\lambda e [\text{VoiceP AGENT}_e(\text{Dieter}) \ \& \ [\text{VP deliver}_e(\text{the paper})]]$

AGENT_e(*Dieter*) means that Dieter is the agent of the action *e*. But we cannot represent the sentence *Dieter öffnete das Fenster* 'Dieter opened the window' in that simple way because *open_v(the window)* is not a set of events but a relation between events and states. Hence we have to convert this relation into a set of events by means of an "eventizer" EVENT, which existentially closes the event variable. And we have a "stativizer" STATE, which existentially closes the result and gives us the adjectival passive. These operators are found in Kratzer (2000).

⁷. Over the years, I have repeatedly tried to work out this idea, but I have never been really content with my results. The paper that comes nearest to what I am saying here is Stechow (1996a).

- (22) Aktionsart choosers (Kratzer, to be revised)
- EVENT = $\lambda R \lambda e \exists s [R(e)(s)]$ (the eventizer)
 - STATE = $\lambda R \lambda s \exists e [R(e)(s)]$ (the stativiser)

The eventive participle (or VP) and the stative participle are now simply distinguished by a different “aktionsart chooser.”

- (23) a. The eventive VP **open**: $\lambda x [_{VP} \text{EVENT } \text{open}_V(x)]$
 b. The stative AP **opened**: $\lambda x [_{AP} \text{STATE } [_{PartP} \text{open}_V(x)]]$

By a bit of calculation, we find out that the eventive VP is true of an x and an event e iff e is an event that causes the state that x is open. The stative AP is true of an x and a state s if s is the state that x is open and s is caused by an opening event. So the sentence *Dieter opened the window* has the LF

- (24) PAST_i PVF $\lambda e [_{VoiceP} \text{AGENT}_e(\text{Dieter}) \ \& \ [_{VP} \text{EVENT } \text{open}_V(\text{the window})]_e]$

whereas the adjectival passive has the following analysis:

- (25) a. *Das Fenster war geöffnet.*
 ‘the window was opened’
 b. $[_{TP} \text{the window } \lambda x \text{PAST}_i \text{ was } [_{AspP} \text{IPFV } [_{AP} \text{STATE } [_{PartP} \text{open}_V(x)]]]]]$

(The IPFV could safely be omitted.) All this looks very attractive, but I have doubts that we can express the restitutive reading of (2) by this method. Note that the representation of repetitive readings poses no problem for the new theory. We simply apply the modifier *again* to the VP or AP and obtain a good result:

- (26) a. $\lambda x. \text{again } [_{VP} \text{EVENT } [\text{open}_V(x)]]$
 b. $\lambda x. \text{again } [_{AP} \text{STATE } [_{VP} \text{open}_V(x)]]$

(26b), for instance, is true of an x and a state s if s is a being open of x and s is generated by a particular event, and another state with the same property occurred in the past. In other words, the repetition of a state implies the repetition of an event that generates it. I think this prediction is borne out by the facts.

What about the restitutive reading for the eventive VP? In order to modify the result by means of *again*, we have to assume that the adverb can directly apply to the transformative VP in (26a). The best we can have is the following meaning rule:

- (27) Restitutive *again* for Kratzer (2000)? A failed attempt
 $\text{again}_{\text{rest}} = \lambda R \lambda e \lambda s [R(e)(s) \ / \& \ \exists s' [\tau(s') < \tau(e) \ \& \ \exists e'. R(e')(s')]]$, R of type $\langle vt, t \rangle$

The LF for the restitutive eventive VP would then be the following one:

- (28) $\lambda x [_{VP} \text{EVENT } \text{again } [_{VP} \text{open}_V(x)]]$

This, however, does not give us what we want. The eventive VP applies to an x and an event e iff there is an s caused by e and x is open in s & there is an s' : $\tau(s') < \tau(s)$ & x is open in s' and there is another event e' such that e' causes s' . This reading, however, is too strong because it implies the repetition of the becoming-open event. This is not the restitutive reading we wanted to obtain.

A very similar approach as Kratzer’s has been made in Piñón (1999). Exactly as Kratzer he analyses intransitive *open* as follows:

- (29) Piñón’s intransitive *open* [27]
 $\text{open}_{\text{itr}} = \lambda s \lambda x \lambda e [\text{Result}(e, x, s, \text{Be-open})]$, where
 $\text{Result}(e, x, s, P) := \text{Theme}(e, x) \ \& \ e \text{ abuts } s \ \& \ P(s) \ \& \ \text{Theme}(s, x)$

Piñón does not treat tense, but applying our tense rules, the sentence *the door opened* would be analysed as:

- (30) PAST_i PFV $\lambda e \exists s. \text{open}_{\text{itr}}(e, \text{the door}, s)$

The existential closure of the state variable is achieved by means of a default rule; cf Piñón (1999:(31)). Exactly as before, the only way to possibly represent the restitutive reading for *again* is to apply an appropriate version of the adverb to the verb *open*_{itr} before the existential closure applies. So a possible LF could be this:

- (31) PAST_i PFV $\lambda e \exists s$. **again**_{rest}(**open**_{itr})(e, *the door*, s)

As before, the best meaning we can have for the adverb is the following one:

- (32) Restitutive *again* for Piñón (1999)? Another failed attempt.
again_{rest} := $\lambda R \lambda s \lambda x \lambda e [R(s)(x)(e) \ \& \ \exists s' [\tau(s') < \tau(e) \ \& \ \exists e'. R(s')(x)(e')]]$

As under Kratzer's analysis, the repeated state must be the result of a previous opening. So this is not the restitutive reading but the repetitive one.

Jäger and Blutner (1999), who pursue a similar approach to Piñón and Kratzer, are aware of the problem arising with restitutive *again*. They would say that something like (28) or (31) is the correct LF and that there is an event that generates the resultant state. But the event doesn't occur in our world. It is merely a possible event. The resultant state, however, occurred in the past of our world. To implement the idea, we would probably have to say that STATE and EVENT quantify over actual states/events, while the stativiser occurring in the definition of *again*_{rest} quantifies over possible events only. In order to work this out, we would need a modal framework, and many questions would have to be considered. I do not think that Jäger and Blutner (1999) have developed such a theory and I have commented on their approach in Stechow (2000a). As to Kratzer's approach, I understand her notion of causation as relative to the actual world (viz. the world of evaluation). Then we have the problem mentioned.

For the time being, I propose to overcome the difficulty by changing the logical type of states. I will assume that the property which qualifies the result state is an argument of the relation as well. Thus Kratzer's entry is changed in the following way:

- (33) Verb with result states [official version]
open_v := $\lambda x \lambda e \lambda S \lambda s [cause(e,s) \ \& \ S = \mathbf{open}_A(x) \ \& \ S(s)]$,
 S a property of states/times

The aktionsarten choosers have to be revised accordingly.

- (34) Aktionsart choosers [official version]
 a. EVENT = $\lambda R \lambda e \exists S \exists s [R(e)(S)(s)]$, S a property of states/times
 b. STATE = $\lambda R \lambda s \exists S \exists e [R(e)(S)(s)]$

Here is the representation of a minimal pairs by means of the official theory:

- (35) a. Das Fenster öffnete sich. [official version]
 'The window opened'
 b. PAST_i PFV EVENT **open**_{v(w)}
 iff $\exists e [\tau(e) \subseteq PAST_i \ \& \ \exists s \exists S [\mathbf{open}_v(w)(e)(S)(s)]]$
 iff $\exists e [\tau(e) \subseteq PAST_i \ \& \ \exists s \exists S [cause(e,s) \ \& \ S = \mathbf{open}_A(w) \ \& \ S(s)]]$
 iff $\exists e [\tau(e) \subseteq PAST_i \ \& \ \exists s [cause(e,s) \ \& \ \mathbf{open}_A(w)(s)]]$
- (36) a. Das Fenster war geöffnet. [official version]
 'the window was opened'
 b. PAST_i IPFV STATE **open**_{v(w)}
 iff $\exists s [PAST_i \subseteq \tau(s) \ \& \ \exists e [cause(e,s) \ \& \ \mathbf{open}_A(w)(s)]]$

We are now in a position to represent the meaning of restitutive *again* correctly:

- (37) Restitutive *again* [official version]
again_{rest} = $\lambda R \lambda e \lambda S \lambda s [R(e)(S)(s) \ \& \ \exists s [\tau(s) < \tau(e) \ \& \ S(s)]]$, R of type $\langle vSs, t \rangle$, v the type of events, S the type $\langle i, t \rangle$

Everything is as before, but the eventive VP with restitutive *again* can now be expressed. Its LF looks exactly like (28), i.e. it is $\lambda x_{[VP \text{ EVENT } again [VP \text{ open}_V(x)]]}$, but it means something different, which is due to the revisions. The VP is true of an x and an event e iff e has the following property: $\exists e[\text{cause}(e,s) \text{ open}_A(x)(s) \ / \& \ \exists s'[\tau(s') < \tau(e) \ \& \ \text{open}_A(x)(s')]]$. This is exactly right.

So what about the adjectival passive of a verb without an accessible resultant state like *abgeben* ‘deliver’? In this case we have to use the PERFECT-operator, i.e. the aspectual operator defined in **Fehler! Verweisquelle konnte nicht gefunden werden.**) It follows that the sentence

- (38) Der Aufsatz ist wieder abgeben.
 ‘the paper is delivered again’

has to be formalised by means of the stative VP $\langle [again [_{AP} \text{ PERF delivered (the paper)}]] \rangle$. The semantics entails that the sentence can only have the repetitive reading. The theory predicts that there is another representation: *again* can have narrow scope with respect to PERFECT. Fortunately, we obtain the same reading under that alternative, too.

Note that the revised theory enables us to formulate a meaning rule for a durative adverb that indicates the length of the result state. In earlier papers I had no satisfactory solution for the problem.

- (39) The shop opened for 2 hours.

Here is the meaning of the adverbial:

- (40) $\parallel \text{for 2 hours} \parallel = \lambda R \in D_{\langle v, \langle s, \langle s, t \rangle \rangle} \lambda e \in D_v \lambda S \in D_s \lambda s \in D_s \cdot R(e)(S)(s) \ \& \ S\text{-phase}(s) \ \& \ \text{duration}(s) = 2 \text{ hours}$

An S-phase is a maximal S-state, i.e. S-phase(s) iff S(s) and there is no larger s' such that s is a part of s' and S(s'). The adverb has to apply to the root-VP, i.e., we have the representation:

- (41) PAST₁ PFV EVENT for 2 hours $\text{open}_A(\text{the shop})$

This statement can be true of a rather short past time, but it entails that the result state lasted for two hours. Presumably, this reading is too strong, because the shop might have been closed after 10 minutes. The result should last the two hours in the normal course of events and therefore has to undergo modalisation. The present account doesn’t incorporate this aspect yet, but it is open to such a refinement.

Let us return to examples (1), which have been introduced at the beginning of this section. The most straightforward formalisation of (1a) is this:

- (42) Die Bibliothek ist seit 9 Uhr geöffnet.
 NOW **seit** 9 [_{AP} STATE $\text{open}_V(\text{the library})$]

This means that the library is open now as a result of a becoming-open event and it has had that property at least from (the time starting at) 9 o’clock onwards.

Finally, look at (1b), which is repeated for convenience:

- (43) Wolfgang hat Diano seit Freitag verlassen.
 Wolfgang has Diano since Friday left

We are interested in the resultative reading: the leaving took place on Friday and Wolfgang has not been to Diano since Friday. The first thing I want to show is that we cannot obtain the resultative reading if we assume that the external argument is introduced separately in VoiceP by means of the semantic AGENT-relation. *verlassen* ‘leave’ is a transformative verb with an accessible resultant state. Its meaning of the verb could be something like this:

- (44) First meaning of ‘leave’ [official version]
 $\text{leave}_1 := \lambda y \lambda x \lambda e \lambda S \lambda s [e \text{ cause } s \ \& \ S = \text{out}(y)(x) \ \& \ S(s)]$

The action that causes the result that Wolfgang has left Diano must have been done by Wolfgang. Therefore, the AGENT has to be introduced into the LF before we generate the resultant state. We convert the VP ‘leave Diano’ into a class of events by means of the operator EVENT. Then we “activise” the event by introducing an AGENT, which is located in the head of Kratzer’s VoiceP. The result after plugging in the object and the subject is the following structure:

- (45) $\lambda_e[\text{VoiceP AGENT}_e(\text{Wolfgang}) \& [\text{EVENT leave}_1(\text{Diano})(\text{Wolfgang})]_e]$
(to be revised)

If we have gone so far, there is no way anymore to stativise this property. The VoiceP has the logical type $\langle v, t \rangle$, but the STATE-operator requires an argument of type $\langle vSs, t \rangle$, where S is short for $\langle i, t \rangle$. We could try to generate a state by means of the PERFECT-aspect and embed the structure

- (46) PERFECT $\lambda_e[\text{VoiceP AGENT}_e(\text{Wolfgang}) \& [\text{EVENT leave}_1(\text{Diano})(\text{Wolfgang})]_e]$
(to be revised)

under the adverbial *seit Freitag*. There are, however, two problems with this. First, the reading is not the resultative one, but a very weak one. Wolfgang might have gone back to Diano even on Friday and the sentence would still be true. The second problem is that this theory would heavily overgenerate in predicting that many sentences have a “resultative” reading which intuitively do not have one. For instance, Musan (2001) claims that the following example is acceptable in the sense that Eva is in the POST-time of a sleeping for a time span that started sometimes within yesterday:

- (47) Eva HAT *seit gestern geschlafen*. [5.3]
Eva HAS since yesterday slept

This interpretation is compatible with the scenario that Eva slept yesterday but she did not sleep after that time, in other words, Eva has not slept since yesterday and, according to Musan, the sentence even implicates this reading. I do not get this interpretation at all. This suggests that the analysis given in (46) is not correct. Let us try to improve it.

I think the failure of our attempt resides in the attempt to exclude the AGENT-relation from the lexical entry. Here is a revised lexical entry for ‘leave’.

- (48) Second meaning of ‘leave’ [official version]
leave₂ := $\lambda y \lambda x \lambda e \lambda s \lambda s [\text{AGENT}_e(x) \text{ e cause } s \& S = \text{out}(y)(x) \& S(s)]$

We can now represent the resultative reading correctly in the following way:

- (49) $[\text{TP NOW seit Friday } [\text{VP STATE haben } [\text{VP leave}_2(\text{Diano})(\text{Wolfgang})]_e]]$

This LF means that Wolfgang has been in the state of being out of Diano since Friday, and this as the result of having left Diano on Friday.

Here is a summary of my theory of the perfect of result:

- (50) Perfect of Result [official version]
- The Perfect of result is created by application of STATE to a VP of type $\langle vSs, t \rangle$.
 - If the embedded verb stem has the type $\langle e, \langle vSs, t \rangle \rangle$, the category of the derived state is AP.
 - If the embedded verb stem has the type $\langle e, \langle e, \langle vSs, t \rangle \rangle \rangle$, the category of the derived state is VP and STATE is expressed by the auxiliary *haben*.

The adjectival and the verbal construction are not entirely parallel. The adjectival passive has STATE in the AP-head that converts the lexical root into an AP. The copula *sein* is semantically empty and the AP can be used in attributive constructions. The second construction cannot be used attributively:

- (51) a. die geöffnete Bibliothek ‘the opened library’
 b. *der Diano verlassene Wolfgang ‘the Diano left Wolfgang’

To be sure, the verb *verlassen* ‘leave’ can have an adjectival passive as well, but this must be derived from the lexical entry **leave**₁, i.e., this adjectival passive has the LF ⟨STATE **leave**₁⟩:

- (52) die verlassene Stadt ‘the left city’
 the λ_y [_{AP} STATE **leave**₁(y)(PRO_{arb})] city

PRO_{arb} must mean something like ‘everyone’ here. There is much more to say about these constructions, of course. In particular we should know more about the semantic nature of the subjects in passive constructions.

The outcome of this discussion is that we need two lexical entries for “subject oriented result verbs”, i.e., verbs where the subject figures in the resultant state.⁸

⁸. In Stechow (1996c) I had to assume a special syntax for this kind of verbs in order to get the case rules right.