

CHAPTER 5

INTERACTIONS WITH TEMPORAL ADVERBIALS

1. INTRODUCTION

Our main concern in this chapter are the questions of what functions temporal adverbials can have in simple tense clauses and in perfect clauses, and how temporal adverbials can interact with each other. We will identify possible functions of temporal adverbials and provide evidence that temporal adverbials can indeed take over these functions. Of course this general working strategy does not imply any claims about any particular adverbials, nor does it take into account idiosyncratic properties of adverbials in much detail. We will take it for granted that the classification of temporal adverbials as sketched in chapter 4, and as supplemented by more subtle distinctions in the literature, is well-motivated; that the internal semantic composition of particular temporal adverbials can be captured adequately, and we will assume plausible definitions of the semantic contribution of particular adverbials without arguing for them in detail.

What functions can temporal adverbials have? Since at least three types of temporal adverbials are to be distinguished – namely, quantificational adverbials like *immer* ('always'), positional adverbials like *gestern* ('yesterday'), and durational adverbials like *eine Stunde lang* ('for an hour') – it is clear that they can have at least three different functions:

- quantificational adverbials quantify over (temporal) entities,
- positional adverbials can locate entities temporally, and
- durational adverbials can specify the duration of entities.

But there is another crucial distinction with regard to functions of temporal adverbials; it seems that within a particular clause they can sometimes specify different entities that occur on different levels. For instance, in a past perfect clause as in (1.1a), the temporal adverbial can either specify the time of the leaving or the time of the having left (cf. Bäuerle (1979), Ballweg (1988), Comrie (1985:79), Ehrich (1992:133), Fabricius-Hansen (1986), Herweg (1990), and others). This is indicated in the two possible paraphrases of (1.1a), (1.1b) and (1.1c), respectively.

- (1.1) a. Die Eule hatte die Schule um 10 Uhr verlassen.
the owl had the school at 10 o'clock left
b. The owl's leaving the school took place at 10 o'clock.
c. At 10 o'clock, the owl was gone.

Thus, we must also address the question which levels of the semantic representation temporal adverbials can operate on. This will be done within the framework of temporal interpretation developed in the preceding chapters.

2. THE FORMAL INTEGRATION OF TEMPORAL ADVERBIALS IN SEMANTIC REPRESENTATIONS

Nonquantificational temporal adverbials are predicates of times and can serve as intersective restrictors of temporal adverbs of quantification. As will be shown shortly, they can in principle occur in the restrictive clause of each of the (possibly implicit) three quantificational adverbs $\exists T$, $\exists A$, and $\exists P$. Hence, they can serve as specifiers on all three levels that are crucial for the semantic representation of perfect clauses: the tense level, the aspect level, and the participle level. (2.1) shows an example where the temporal position adverbial *gestern* ('yesterday') specifies the participle level. Note that the aspect relation displayed in (2.1) is of a perfective nature. Since the aspect in perfect clauses relates the post-state to the tense time and post-states last forever, it is clear that the aspect here is a restricted perfective aspect. The sentence in (2.1a) can, of course, also exhibit imperfective aspect. For ease of presentation, the interpretation of the present tense will henceforth be simplified in the following way: in this chapter we will only be concerned with readings where the tense time is an environment of the time of utterance, i.e. futurate present tense readings are disregarded.

- (2.1) a. Eva hat gestern geschlafen.
 Eva has yesterday slept
 b. $\exists t_T [TU \subseteq t_T \ \& \ \exists t_A [t_A \subseteq t_T \ \& \ \exists t_P [t_P < t_A \ \& \ \text{gestern}(t_P) \ \& \ \text{Eva_schlaf}(t_P)]]]$
 c. There is a tense time t_T such that t_T is an environment of the time of utterance and there is an aspect time t_A such that t_A is (possibly improperly) located within t_T and there is a participle time t_P such that t_P is (possibly improperly) before t_A and t_P is (possibly improperly) located within yesterday and Eva is asleep at t_P .

The interpretation shown in (2.1) corresponds to a specification of the VP-situation time in a perfect clause. - Let us now take a closer look at the functions temporal adverbials can have.

3. TEMPORAL ADVERBIALS ON THE TENSE LEVEL, ASPECT LEVEL, AND PARTICIPLE LEVEL

3.1. Distinguishing tense level and aspect level

Consider the sentences in (3.1). The constellation of time intervals characterized in them is very special. First, there is a time interval mentioned that is located around the time of utterance – today and this year, respectively. Second, within this time interval, various smaller time intervals are contained at which the situations talked about take place – 2, 3, and 5 o'clock p.m. in (3.1a) and some times before breakfast in (3.1b). These smaller time intervals can be located before, at, or after the time of utterance.

- (3.1) a. Heute fahren die Züge nach Hamburg um 14, 15 und 17 Uhr ab.
 today leave the trains to Hamburg at 2, 3 and 5 p.m. PARTICLE
 b. Dieses Jahr rennt Lola manchmal vor dem Frühstück.
 this year runs Lola sometimes before the breakfast

There are different ways to deal with this constellation. In our present account, the most natural assumption is to say that in both sentences, the present tense locates the tense time – today and this year, respectively – around the time of utterance. The aspect locates, by a perfective aspect relation, the situation times of leaving for Hamburg and of running within the tense time.

This approach is fully compatible with the fact that constructions analogous to the ones in (3.1) can arise with other tenses, i.e. the past tense. This can be seen in (3.2). But here, the frame times and the situation times do not differ with regard to their relations to the time of utterance.

- (3.2) a. Gestern fuhren die Züge nach Hamburg um 14, 15 und 17 Uhr ab.
yesterday left the trains to Hamburg at 2, 3 and 5 p.m. PARTICLE
 b. Letztes Jahr rannte Lola manchmal vor dem Frühstück.
last year ran Lola sometimes before the breakfast

Hence, the option to show interpretations like the ones in (3.1) and (3.2) seems to be a property of tenses in general, not of the present tense alone.

Another possibility to deal with sentences like the ones in (3.1) would be to pursue the traditional claim that the tense of a clause locates the situation time of the main predicate relative to the time of utterance of the clause. Under this type of approach, one would have to say that the complex and temporally extended properties of leaving today at 2, 3, and 5 p.m. in (3.1a), and of running sometimes before the breakfast in (3.1b), are by the present tense located around the time of utterance. Under this type of approach, one may say that present tense clauses like the ones in (3.1) are special cases of the 'generic', or 'habitual present tense' reading, whose core cases are illustrated in (3.3).

- (3.3) a. Zwei und zwei ist vier.
two and two equals four
 b. Die Erde dreht sich um die Sonne.
the earth turns self around the sun
 c. Vögel können fliegen.
birds can fly

What is genericity in this sense? – The standard assumption in more traditional accounts of temporal semantics is that under their canonical interpretation, tenses locate the situation time of the VP of their clause relative to the time of utterance. As has been observed, for instance, by Thieroff (1992:91) (who cites Jespersen (1965:258f) and Admoni (1982) as defenders of similar views) in sentences like the ones in (3.3), the situation times located around the time of utterance just happen to be very large time intervals. But their location with regard to the time of utterance can be analyzed analogously to the location of 'standard' situation times. Under this type of approach one may analyze the examples in (3.1) as cases similar to the ones in (3.3), with the main difference that the sentences in (3.3) describe situations that take place with interruptions, or iterative situations that are located around the time of utterance (cf. Thieroff (1992:92)). Although this account is not in general implausible, it is not compatible with the framework of temporal interpretation which we presuppose in this book. Under the assumption of another framework, however, it may very well be worth pursuing.

Hence, in the present framework it seems best to analyze sentences such as (3.1) as clauses where a plurality of aspect times is located within a relatively large tense time.

3.2. Position adverbials on the tense level and on the aspect level in simple tense clauses

Given that the tense time is located by the present tense around the time of utterance, it is a very natural assumption that in clauses as in (3.1) there are, by an appropriate quantificational adverb, various aspect times located within the tense time. Thus, (3.1b), repeated here as (3.5a), may be represented as in (3.5b). Under the present account, it can be paraphrased as in (3.5c).

- (3.5) a. Dieses Jahr rennt Lola manchmal vor dem Frühstück.
 this year runs Lola sometimes before the breakfast
 b. $\exists t_T [TU \subseteq t_T \ \& \text{dieses_Jahr}(t_T) \ \& \text{MANCHMAL } t_A [t_A \subseteq t_T \ \& \text{vor_dem_Frühstück}(t_A)] [Lola_renn(t_A)]]$
 c. There is a tense time t_T such that t_T is an environment of the time of utterance and t_T is located in this year and there are some aspect times t_A such that t_A is (possibly improperly) located within t_T and t_A is located before the breakfast time and Lola runs at t_A .

Thus, in this approach, positional temporal adverbials can function as restrictors both on the tense level and on the aspect level: in (3.5), *dieses Jahr* ('this year') is a restrictor on the tense time level while *vor dem Frühstück* ('before the breakfast') is a restrictor on the aspect time level. Moreover, the quantificational adverb *manchmal* ('sometimes') takes the role of the quantifier of the aspect time level.

3.3. Position adverbials on the tense level and on the aspect level in perfect clauses

In the present framework, we expect that perfect clauses behave analogously to simple tense clauses insofar as they can contain adverbials on the tense level, as well as on the aspect level.

What reading do we expect when a position adverbial restricts $\exists t_T$ (i.e. specifies the tense time) in a perfect clause? Under this reading, the adverbial in question is able to provide a kind of temporal 'frame' within which a perfective aspect interpretation can locate one or more aspect times. The distinction between the tense time level and the aspect time level becomes particularly visible when a plurality of aspect times is located within a single tense time frame. In the following we will look at this type of clause in particular – a clause where an appropriate quantification takes place on the aspect time level so that a plurality of aspect times is located within a particular tense time.

Since in perfect clauses the aspect time corresponds to a post-state time introduced by the perfect, what we are looking for are perfect clauses in which a plurality of post-states is located within a single tense time. Although such clauses occur rarely, they do exist. (3.6a) is an example of the appropriate type; the focus accent on the auxiliary makes the intended reading more easily available. (3.6b) shows its semantic representation under the intended reading, and (3.6c) provides a

paraphrase.⁹⁵ The adverbial *morgens um acht* ('in the morning at eight o'clock') temporally locates the relevant post-states of Lola having run already (i.e. serves as a specifier of the aspect times quantified over by *manchmal* ('sometimes')); while the adverbial *dieses Jahr* ('this year') specifies the tense time within which the aspect times in question are located.

- (3.6) a. *Dieses Jahr IST Lola manchmal morgens um acht bereits gerannt.*
this year has Lola sometimes in-the-morning at eight already run
 b. $\exists t_T [TU \subseteq t_T \ \& \ \text{dieses_Jahr}(t_T) \ \& \ \text{MANCHMAL } t_A [t_A \subseteq t_T \ \& \ \text{morgens_um_acht}(t_A)] [\exists t_p [t_p < t_A \ \& \ \text{Lola_renn}(t_p)]]]$
 c. There is a tense time t_T such that t_T is an environment of the time of utterance and t_T is located in this year and there are some aspect times t_A such that t_A is (possibly improperly) located within t_T and t_A is located at eight in the morning and there is a participle time t_p such that t_p is (possibly improperly) before t_A and Lola runs at t_p .

Hence, as in simple tense clauses, position adverbials in perfect clauses are able to specify the tense time as well as the aspect time. Moreover, it is obvious that they can also contain position adverbials on the participle level.

3.4. Position adverbials on the participle level

Consider (3.7a). The position adverbial *gestern* ('yesterday') in this example clearly specifies the situation time of the VP that is embedded in the perfect construction. Hence, in the present account, it serves as a restrictor on the participle level as is indicated in the semantic representation in (3.7b). As in the examples above, (3.7c) paraphrases the intended reading. Although the adverbials function here is not ambiguous, the example comes out best with stress placed on the embedded verb.⁹⁶

- (3.7) a. *Gestern ist Lola geRANNT.*
yesterday has Lola run
 b. $\exists t_T [TU \subseteq t_T \ \& \ \exists t_A [t_A \subseteq t_T \ \& \ \exists t_p [t_p < t_A \ \& \ \text{gestern}(t_p) \ \& \ \text{Lola_renn}(t_p)]]]$
 c. There is a tense time t_T such that t_T is an environment of the time of utterance and there is an aspect time t_A such that t_A is (possibly improperly) located within t_T and there is a participle time t_p such that t_p is (possibly improperly) before t_A and t_p is (possibly improperly) located within yesterday and Lola runs at t_p .

⁹⁵ Because of the stative nature of perfect constructions and idiosyncratic properties of the present tense, present and future adverbials in present perfect clauses - but not in past perfect clauses - can only serve as specifiers on the tense time level or on the aspect time level, but clearly not on the situation time level of the embedded VP (cf. Musan (1998, 2000, 2001, and chapter 2 above)). Therefore, a present perfect clause makes the intended reading more suggestive.

⁹⁶ Since past adverbials in present perfect clauses - but not in past perfect clauses - can only serve as specifiers of the embedded VP-situation time but not as tense time or aspect time specifiers (cf. Musan (1998, 2000, 2001, and chapter 2 above)), the example is unambiguous in this respect.

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