GERMAN TEMPORAL PREPOSITIONS FROM AN ENGLISH PERSPECTIVE

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The following is an attempt to analyse the procedures for selecting temporal prepositions (or conjunctions) in German according to the framework developed in Brée et al. (1990). Systematic contrast is made with the English as analysed there (and, where interesting or relevant with Dutch). The German time words follow similar selection trees for those in English and Dutch, but there are some quite interesting differences (and not a few problems), and some amendments had to be made to the analysis in Brée et al. (1990). Despite these differences, there would seem to be no reason in principle why the analytical framework in terms of decision trees adopted by Brée et al. (1990) should not be as revealing for German as for other languages.

An initial analysis was made in terms of equivalents established in the course of work on Durrell (1991a & 1991b) rather than by looking at translation equivalents. This had the advantage that no major equivalents were missed, and other authoritative data sources were also checked to this end, viz. Buscha (1989), DUDEN (1976-81), Oxford-Duden (1990), Schmitz (1964), Schröder (1990) and Terrell et al. (1991). However, this procedure meant that assessments regarding the relative standing of the equivalents were subjective, whilst in Brée et al. (1990) they were established objectively through a corpus of translation data. As a consequence, there may be some skewing because of the lack of comparable corpus data and this could have led to undue importance being given to some equivalents. Any possible failings here would need to be rectified later on the basis of a corpus of translation data.

1 The English and Dutch selection trees

Brée et al (1990) proposed selection trees for English and Dutch temporals on the basis of translation data, and these we show in Figures 1 and 2. We now describe the branches of the English and Dutch selection trees.

1.1 The selection tree for English temporal function words

The first and main distinction is whether or not the time of the matrix state or event, 'stevent', is being equated to that of the sub stevent. If it is, then the nature of the sub stevent is considered. If the sub stevent is:

- an event then:
  - use *as*;
  - unless this event shifts the Time of Discourse, TOD, then:
    - if the sub event is a period, use *while*,
    - otherwise, use *when*;
- a state, then:
  - if it is a time point, use *at*,
    - unless the matrix stevent can take place at a time earlier than the sub state, use *by*;

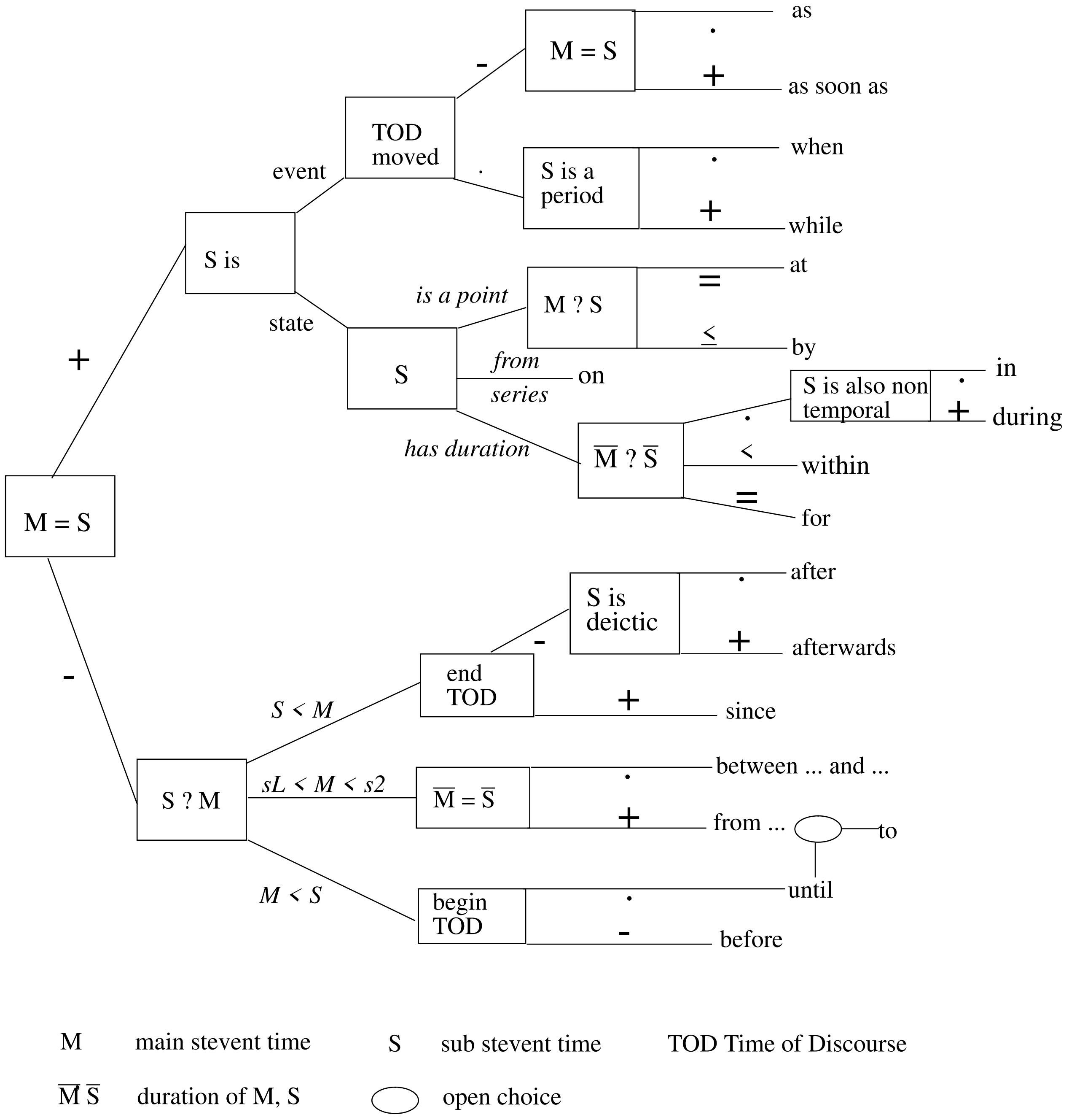
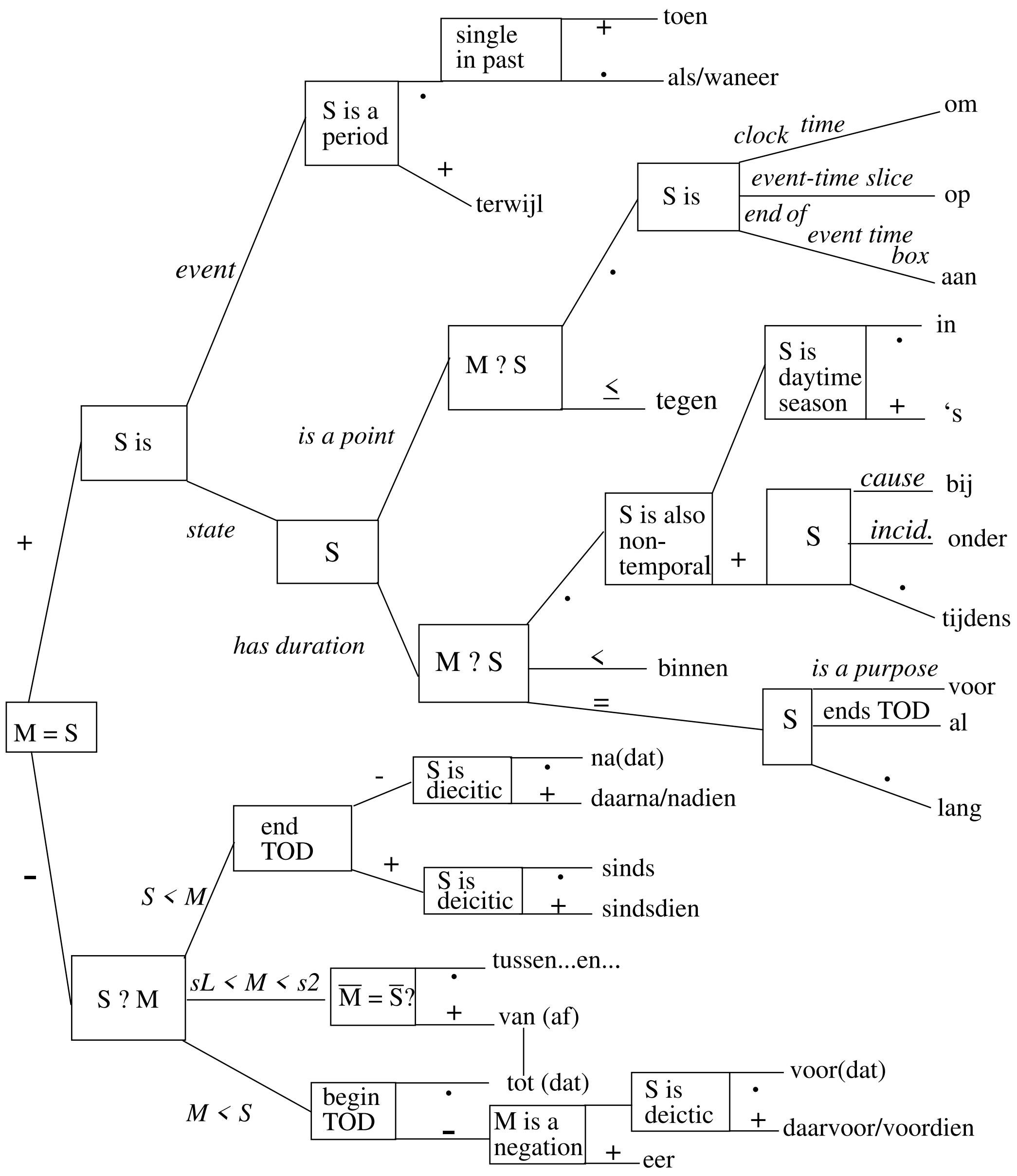


Figure 1: Selection tree for English temporal functions words (revised)



M **main stevent time** **S** **sub stevent time** **TOD Time of Discourse**
M S **duration of M, S**

Figure 2: Selection tree for Dutch temporal function words (revised)

  - if the sub state is selected from a series of states, e.g. days of the week, use *on*;
  - if the sub state has a duration then:
    * if the duration of the matrix stevent is to be equal to that of the substate, use *for*;
    * if the duration of the matrix stevent is to be less than that of the sub state, use *within*;
    * otherwise, use *in*,
      · unless the sub state can also be given a non-temporal interpretation (usually locative), then use *during*.

If the time of the matrix stevent is not to be made approximately the same as that of the sub stevent, then the order of the matrix and sub stevents needs to be considered. If the matrix stevent is to fall in a period that:

- is to follow the sub stevent, then:
  - if the other end of the period is to be the TOD, use *since*
  - otherwise use *after*;
- is to precede the sub stevent, then:
  - if the other end of this period is to be the TOD, use *until*
  - otherwise use *before*;
- is to be sandwiched between two sub stevents, then:
  - if the matrix event is to last for the whole of the period between the two parts of the sub stevent, then for the first sub stevent, use *from*, and for the second use *to*
    * unless the second is an event, use *until*
  - otherwise use *between..... and*

There are certain results that we have not shown in the selection tree, to avoid clutter:

- *in* with a non-definite time duration can also be used to indicate, not a time period of that duration beginning at the TOD, but rather a point in time which is located on the time axis at a point given by the TOD plus this duration;
- *over*, in expressions like *over the weekend*, is not shown. This use of *over* is an alternative for *at* or *in*, depending on whether weekends etc. are to be regarded as time points or time periods

1.2 The selection tree for Dutch temporal function words

A similar rule holds for selecting Dutch temporal prepositions and conjunctions. Again the first and main distinction is whether the time of the matrix stevent is being equated to that of the sub stevent or not. If it is, the nature of the sub stevent is considered. If the sub stevent is:

- an event then:
  - if the sub event is a period, use *terwijl*
  - otherwise:
    * if the TOD is in the past and the matrix stevent is one off, use *toen*
    * otherwise use *als* (or *wanneer*);

- a state, then:
  - if this state is a point in time, then:
    - if it is a clock time, use *om*,
    - if it is a event-time slice, use *op*,
    - if it is at one end of an event-time box, use *aan*,
    - unless the matrix stevent can take place at a time earlier than the substate, use *tegen*;
  - if the sub state has a duration then:
    - if the duration of the matrix stevent is to be equal to that of the sub state, then use nothing, adding .... *lang* for emphasis,
      - unless the sub state is a period ending at the TOD, use *al*, or
      - unless the sub state indicates the purpose of the matrix stevent, use *voor*;
    - if the duration of the matrix stevent is to be less than that of the sub state, use *binnen*;
    - otherwise, use *in* unless the sub state is a time of day or a season of the year, then use 's,
      - unless the sub state can also be given a non-temporal interpretation (usually locative), then:
      - if the sub state is also the cause of the matrix stevent, use *bij*,
      - if the sub state is incidental to the matrix stevent, use *onder*;
      - otherwise use *tijdens*.

If the time of the matrix stevent is not to be made approximately the same as that of the sub stevent, then the order of the matrix and sub stevents needs to be considered. If the matrix stevent is to fall in a period that:

- is to follow the sub stevent, then:
  - if the other end of this period is to be the TOD, use *sinds*
  - otherwise use *na* unless the sub stevent is an event, use *nadat*;
- is to precede the sub stevent, then
  - if the other end of this period is to be the TOD, use *tot* unless the sub stevent is an event, then *totdat* may be used;
  - otherwise use *voor*, unless the sub stevent is an event, then *voordat* may be used;
- is to be sandwiched between two sub stevents, then:
  - if the matrix stevent is to last for the whole of the period between the two parts of the sub stevent, then for the first sub stevent, use *van*, and for the second use *tot*
  - otherwise use *tussen ...... en*.

There is one result that we have not shown in the selection tree, to avoid clutter:

- *over*, with a non-definite time duration, is used to indicate a point in time which is located on the time axis at a point given by the TOD plus this duration.

1.3 Periods versus temporal duration

One point in common to both the English and Dutch temporal function words is that while most of them can only be used to indicate a point or period on the time axis, a few can also be used to indicate a duration of time. These few are some of the prepositions that are used to indicate that the time of the matrix stevent falls within a time duration:

- In English: *in, within* and *for*.
- In Dutch: *in, binnen* and *al*.

The following rule for interpreting their function is:

- if the preposition takes a definite noun phrase, e.g. *for the summer*, then it indicates a time period already bound to the axis:
- if the preposition takes an indefinite noun phrase, e.g *for five minutes* ,then it introduces a time duration. This duration may or may not be attached to the time axis. If it is attached, then the duration can either:
  - begin at the TOD, or
  - end at the TOD, which is indicated by the matrix clause having a perfect aspect.

We turn now to an analysis of the German temporal prepositions and subordinating conjunctions. We considered in turn:

- Simultaneous events.
- Simultaneous points and periods.
- Temporal ordering.

2 Simultaneous events

Table 1 summarises the translation equivalents found between German and English conjunctions. First, some typical data for these are given.

2.1 *als = while, when, as*

Als er in London war, nahm er Klavierstunden	*While/when (*as) he was in London, he took piano lessons*
Die Sonne schien an einem wolken-losen Himmel, als er seinen Heimatort verließ	*The sun was shining in a cloudless sky as/when (*while) he left his home village*
Als ich in Passau ankam, habe ich sie auf dem Bahnsteig gesehen	*When (?as, *while) I arrived in Passau, I saw her on the platform*

2.2 *wie = as, when*

Wie ich an seinem Fenster vorbeigehe, höre ich ihn singen	*As (?when,*while) I passed his window I heard him singing*
Wie ich das Fenster öffne, schlägt mir heftiger Lärm entgegen Während	*When(*as,*while) I opened the window I was confronted by an intense noise*

2.3 *während = while, when, as*

Die Zollprobleme löste Boris, während wir in Urlaub waren	*Boris solved the problems with the customs while/when (*as) we were on holiday*
Sie gingen weg, während wir uns unterhielten	*They left as/while we were talking*

2.4 *wenn = when*

Ich bringe es, wenn ich morgen vorbeikomme	*I'll bring it when (*as, *while) I come tomorrow*

2.5 *sobald = as soon as*

Das tat sie auch, sobald sie wieder nach Hause gekommen war	*She did that, too, as soon as she had got home*

2.6 The following should be noted in respect of these data

(I) In standard German *wie* is used with a present tense referring to the past (so-called 'historic present'). It is an (optional) alternative to *als* with a past tense. The use of *wie* with a past tense, as an equivalent to English *as*, is not uncommon but regarded as regional or non-standard, cf. DUDEN (1976-81:2877). In either case, the condition for its use is the same as for English *as*, i.e. the sub stevent is an event which logically follows, or is very close to, the previous TOD.

(II) Although *während* may always be translated by *while*, it may be given by *as* in certain contexts, principally where *as* refers to an activity. Compare:

Ich las ein Buch, während er sich auszog	*I read a book as/while he was getting undressed*
Boris löste die Probleme, während wig weg waren	*Boris solved the problems while (*as) we were away*

This corresponds to the situation in Dutch, cf. Brée et al. (1990:14-15). (III) In general, it seems to be the case that *während* and *als* are interchangeable in certain contexts, paralleling *while* and *when* in English, cf. Brée et al. (1990:12-13). However, it will need further investigation to establish whether the conditions are exactly the same. In particular, native speaker confirmation is needed on the acceptability of contexts such as:

?Als wir in Urlaub waren, hat Boris die Zollprobleme gelöst.

In general, we are dealing here in both languages with contextually determined synonymy in special conditions.

(IV) The distribution of *als* and *wenn* precisely parallels that of Dutch *toen* and *als/wanneer*, i.e. German *als* is limited to single events in the past, whilst *wenn* is used for present, future (including future-in-the- past) and repeated past (i.e. *whenever she hit him...*), cf. Brée et al. (1990:12-17). Like Dutch *als, wenn* is also the usual equivalent of English *if* in conditional sentences, although in German the mood may disambiguate, as the subjunctive is normal in sentences expressing unreal conditions, cf. Durrell (1991a:317-321).

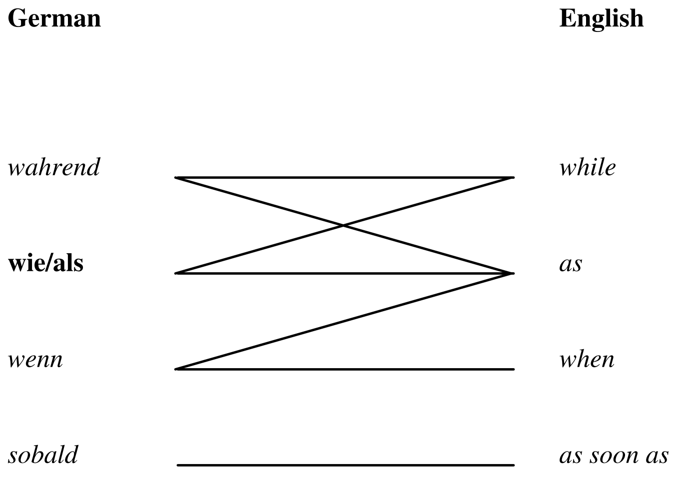


Table 1: German and English temporal conjunctions for simultaneous events

(V) English *as* may correspond to *während* or *als* , but **NOT** to *wenn*, since *as* is not used in a temporal sense in present tense contexts. There is considerable potential for contextual synonymy between *während* and *als* as an equivalent for *as*, and this would merit further investigation. For the use of *wie*, see 2.2.1.

We may draw the preliminary conclusion from these data that the decision trees for German are almost identical to those for Dutch, not least because *als/wenn* parallel *toen/als*. The only major difference is in the (essentially optional) use of *wie* with the historic present. Thus

- to refer to point of time:
  - if a single occurrence in the past - use *als*
    - unless present tense employed, optionally,- use *wie*
  - otherwise- use *wenn*
- to refer to a period of time- use *während*

3 Simultaneous points and periods

In practice, it was found useful in this initial survey to take all the prepositions expressing simultaneity together, as the selection processes in German turned out to be rather different to those described in Brée et al. (1990) for English and Dutch. Table 2 shows the patterning of 'normal' (or 'most usual') translation equivalences between the languages - again with the proviso that the frequency and importance of these correspondences has not been tested against translation data. The section below is ordered in terms of the German prepositions (or the use of cases to indicate temporal relations), following the sequence of Brée et al. (1990:17-35) in terms of semantics.

Table 2. German and English temporal prepositions

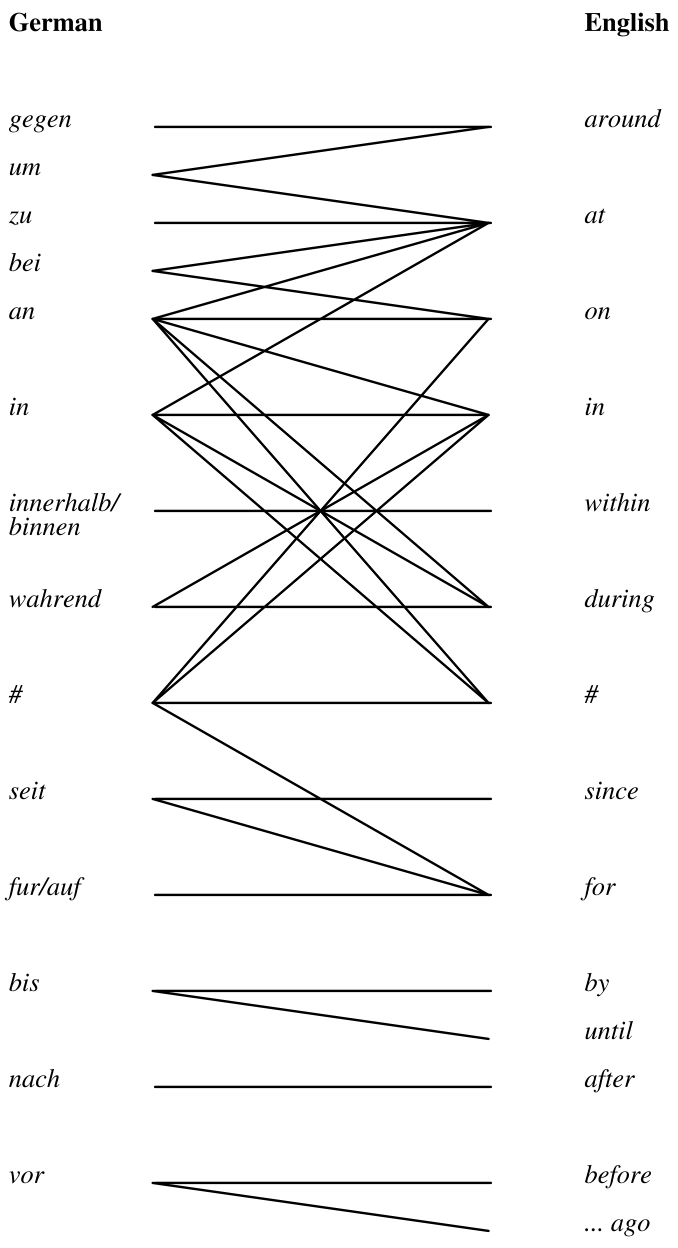


Table 2: German and English temporal prepositions

3.1 *um = at*

um vier Uhr	*at four o'clock*

The use of *um* parallels that of Dutch *om* precisely in that it sets the time of the matrix stevent with clock times only. Thus the decision pathway must involve the choices m=s, s is a state, a point in time and a clock time, as with Dutch *om*.

3.2 *zu = at*

zu Weihnachten, Ostern, Pfingsten	*at Christmas, Easter, Whitsun*
zu dieser Zeit	*at that time*
zur Zeit der letzten Wahlen	*at the time of the last election*
zu einer anderen Zeit	*at some other time*
zu jeder Tageszeit	*at any time of the day*
zu gleicher Zeit	*at the same time*
zu dieser Stunde	*at this hour*
zu jeder Stunde	*at any time*

zu occurs:

(a) in standard German with the major religious festivals (there is some regional and register variation, cf. Durrell (1991b:122)). This corresponds very closely to the use of *met* in Dutch, which did not occur in the data in Brée et al. (1990).

(b) with the nouns *Zeit* 'time' and *Stunde* 'hour' in some contexts. The use of *zu* or or*in* with *Zeit* and *Stunde* is a notoriously difficult area, and it may not always be consistent. This difficulty may be resolved, however, if we assume that *zu* is used with these words if we are dealing with what is perceived as a **point** in time rather than a **period**. In other words the 'time' or the 'hour' is being presented as a unit, rather than as a 'container' within which another stevent occurs. This will become clearer under *in*, cf. 3.8.

The decision path for *zu* thus involves m=s, s is a state and a point in time which is either a religious festival, *Zeit* or *Stunde*.

3.3 *gegen, um = round, about*

If the time set for the matrix stevent is an approximation, two possibilities are available in German, i.e.:

gegen = round, about, getting on for, towards

gegen halb drei	*at about/towards half-past two*

um = round, etc.

Ich komme um Weihnachten (herum)	*I'll come round about Christmas*

There are certain limitations or restrictions on the use of *gegen* and *um*, viz.: (I) *gegen* with clock times is notoriously ambiguous, and native speakers disagree whether it means 'at about' or 'getting on for'/'approaching'. This is a matter of unpredictable idiolectal variation (and the source of much argument, cf. the mutually contradictory information in DUDEN (1976-81:966) and Schröder (1990:117)). With other than clock times *gegen* clearly refers to a period immediately preceding, e.g.:

gegen Mittag	*towards midday*
gegen Ende des Monats	*towards the end of the month*

(II) The use of the intensifier *herum* in conjunction with *um* is essentially optional. However, it is obligatory with approximate clock times, where simple *um* indicates a point in time (i.e. = 'at'), cf. 3.1 above. Clearly, this distribution of *um*...(*herum*) is linked to the potential ambiguity of *gegen* in an interesting way.

3.4 *bei = on, at, during*

bei Tagesanbruch	*at daybreak*
bei seiner Geburt	*at his birth*
bei dieser Gelegenheit	*on this occasion*
bei der Probe	*during the rehearsal*

The function of *bei* is clearly to indicate simultaneity with nouns which do not themselves express temporality (i.e. it indicates 'at the time when x took/was taking/will take place'). In this respect it may refer to a 'point' or a 'period', depending largely on the nature of the stevent denoted by the noun governed by *bei*; *bei* **must** be used with events (or activities/accomplishments) rather than states. In contrast to *während*, it is **only** used as a preposition. If a period is involved, as in the last example above, *bei* may be replaced by *während*. The distinction between *bei* and *während* in such cases is convincingly explained by Schröder (1990:217- 8), who establishes that *bei* may be used only if m and s occur simultaneously **and** in the same place. If simultaneity alone is involved, then only *während* is acceptable, cf.:

während des Vortrags/Beim Vortrag ist es unhöflich zu sprechen	*It is not polite to speak during the lecture*
Bernd kam noch während (*bei) meiner Abwesenheit an	*Bernd arrived during my absence*

Furthermore, as Schröder (loc. cit.) also implies, it is generally the case that, with *bei*, the stevent is envisaged as a point, whilst *während* generally implies duration. However, this would mean that e.g. *bei der Probe* and *während der Probe* would not be wholly synonymous. Schröder offers no evidence which would justify this further assumption, which would require additional corroboration.

Thus, the decision path for *bei* will include m=s, and s is a simple non- temporal event.

3.5 *an = on, in, during, at, #*

an is the most wide-ranging of the temporal prepositions in German:

am Dienstag	*on Tuesday(s)*
am Morgen	*in the morning*
an diesem Tag	*that day*
an Wochentagen	*on weekdays*
am 5. Mai	*on the 5th. of May*
am Tag	*during the day*
am Anfang	*in the beginning*
am Ende	*at the end*
am nächsten Dienstag	*next Tuesday*

In the terms used in Brée et al. (1990:20), *an* is characteristically used with time 'slices', i.e. beginnings and ends, and also all days and parts of days (except *Nacht*, where, like English, there is an idiomatic difference in the preposition used, cf.*in der Nacht* 'at night'). The crucial determinant for the selection of a preposition in the various languages under consideration would appear to be what is perceived as a 'slice' in the specific language. It could be possible to see *an* as introducing one of a series, but its use does not correspond absolutely with that of English *on*, whose major function this is. There would seem, though, to be no need in German to adduce 'two dimensional event-time chunks', as Brée et al. (1990: 20) do for Dutch *aan*, to identify the use of *an* in German.

Notes on the use of *an*:

(I) As in Dutch and English, the use of a preposition is not always obligatory in contexts such as those given. This is to a certain extent a matter of register (the omission being more frequent in the colloquial language), or regional provenance.

(II) *Anfang* and *Ende* are used without a preposition if followed by a further time specifier, e.g.: *Anfang/Ende Mai, Anfang/Ende 1992, Anfang/Ende nŁchster Woche*. (*Mitte* also follows the same pattern, e.g. *Mitte Januar*.) In such contexts we may be dealing with a duration rather than a point, cf. the corresponding Dutch pattern of *begin maart, eind januari, half augustus.*

Thus, the path for the selection of *an* involve m=s, s is a state, s is a point and s is an event-time slice.

3.6 Genitive case = *in*

eines Tages	*one day*
morgens (older: des Morgens)	*in the mornings*

There are two rather distinct uses of the genitive, i.e. (i) to indicate an indefinite, restricted point in time (*eines Tages*), and (ii) to indicate repetition (*morgen*s). Both are rather idiomatic in modern German and restricted to certain lexical items and forms, so that it could be felt more appropriate to deal with them as isolated adverbials rather than as reflecting a productive use of the genitive.

Notes on the use of the genitive case in time adverbials:

(I) *am Abend* and *abends*, etc. may be alternatives to one another, such that *Abends gehe ich mit dem Hund spazieren* and *Am Abend gehe ich mit dem Hund spazieren* are synonymous alternatives, meaning **either** 'In the evenings I go for a walk with the dog' **or** 'This evening I am going for a walk with the dog'. It is not clear whether there are any contextual or pragmatic restrictions on this synonymy, but it is paralleled in Dutch, where '*s avonds* may similarly refer to habitual or repeated action **or** a single point, cf. *'s Avonds ga ik een wandeling doen met de hond*.

(II) Unlike Dutch, seasons cannot be used in genitive constructions in German, cf. *in* in section 3.8. It should be noted, though, in respect of Dutch, that this construction can only be used with the basic 'Germanic' seasons, i.e. '*'s zomers* and *'s winters* (or: *in de zomer, in de winter)* but not **'s herfsts, *'s lentes*.

3.7 *bis = by, until/till*

Bis heute abend habe ich es fertig	*I'll have it finished by tonight*
Ich arbeite hier bis heute abend	*I'm working here till tonight*

From the point of view of English, *bis* is notoriously ambiguous, as the examples show. It can indicate:

(a) that the matrix stevent must occur between the TOD and the sub state
(b) that the sub state is a termination point for the matrix stevent which is commencing at the TOD.

The matrix stevent in (a) is punctual, but in (b) it is durative, and what is happening is that German is not distinguishing this lexically. *seit* has a similar range, cf. 3.13. It would be dubious to try to establish distinct lexemes here, i.e. *bis*^{1} and *bis*^{2} to correspond to English *by* (or Dutch *tegen*) on the one hand and English *until* (or Dutch *tot*) on the other. DUDEN (1976-81:395) simply defines temporal *bis* as 'gibt die Beendigung eines Zeitabschnitts an' (i.e. it indicates the end of a period of time). What *bis* does is to indicate a period between the TOD and the sub state, and the matrix stevent occurs within that period, whether it lasts over the whole period (= 'until') or falls at an unspecified point within it (= 'by'). It would be difficult to accommodate this within the decision tree given in Brée et al. (1990:43-44), as the first decision is $\pm$(m=s), and *bis* would need to appear on both sides of this, i.e. in the places of both English *by* **and** *until*. A solution could be to reanalyse English and Dutch and move *by* (and Dutch *tegen*) from the m=s to the ~(m=s) pathway, as they are concerned with temporal ordering rather than indicating simultaneity. In this way the range of meaning of *bis* could be coped with in the same framework as operates in Dutch and English.

3.8 *in = at, in, during, #*

in diesem Augenblick	*at that moment*
im folgenden Monat	*the following month*
im kommenden Jahr	*next year*
im Sommer	*in the summer, during the summer*
im Mai	*in May*

in der Zeit nach dem Krieg	*in the time after the war*
in der Nacht	*at night, during the night*
in den sechziger Jahren	*in the sixties*
im Krieg	*during the war*

Clearly, *in* is the 'container' word, although it is not easy to visualise the distinction between this and 'borders' or 'slices' (i.e. *an*). The use of one or other prepositions with particular words or semantically related groups of words (e.g. 'days of the week', etc.) seems partly arbitrary - or a matter of language- specific perception, if not purely collocational. Compare, for example: **at** *that moment,* **op** *dat ogenblik,* **in** *dem Augenblick.* The differences here seem to depend on how the speakers visualise 'moments', whether as 'points' or 'having duration'. We note that German, which uses its container word *in* in this context, is quite happy to use *lang* with *Augenblick*, e.g. *einen Augenblick lang*, cf. Brée et al. (1990:32), which points out that *lang* is **not** used with *ogenblik* in Dutch. It would thus appear that, in German, 'moments' are perceived as having duration, whereas in Dutch they are interpreted as 'points'.

Again, like *an, in* may be omitted in some contexts, e.g. *(im) folgenden Monat*. The constraints on this are not wholly clear.

Where *in* is used with *Zeit* and *Stunde*, it would appear to be the case that they are being visualised as 'periods' rather than 'points', e.g.:

In der ganzen Zeit haben wir sie nicht gesehen	*In all that time we didn't see her*
In unserer Zeit tut man das nicht mehr	*In our times that is no longer done*
in ruhigen Stundeni	*in peaceful hours*

Compare the use of *zu* with these words given in 3.3.

German *in* has the same range of ambiguity as English *in*, i.e. there is nothing corresponding to Dutch *over*, e.g.:

Ich komme in einer Woche	*I'm coming in a week*
in vier Jahren	*in four years (time)*
in fünf Minuten	*in five minutes*

This polysemic range is not dissimilar to that of German *bis* and can be coped with without postulating distinct lexical items. Essentially, German *in* is selected by m=s, s is a state having duration and duration of m = duration of s.

3.9 *innerhalb = within*

innerhalb von fünf Minuten	*within five minutes*

This is a hyponym of *in*, used to resolve the ambiguity identified in 3.8 if necessary and indicating clearly that duration of m < duration of s. In formal registers *binnen* is a possible alternative to *innerhalb* without any significant semantic distinction, being in origin a regional alternative.

3.10 *während = during*

The use of *während* as a preposition (= 'during') is clearly linked with its use as a conjunction (= 'while', 'whilst', cf. 1.2.2), and these uses may most appropriately be brought together in the decision tree.

während der Auffhrun	*during the performance*
während des Kriegs lebten sie im Ausland	*During the war they lived abroad*

The distinction between *während* and *in* is that whilst both have duration of m ¡ duration of s, with *während* s may be non-temporal. This parallels English and Dutch. It is, however, notoriously the case that *während* is less frequent than *during*, and this needs further investigation. In particular, it appears that *during* may be more readily used with temporal words than may *während*, cf.:

am Tag	*during the day*
in der Nacht	*during the night*

Schröder (1981:110) asserts that *während* is restricted to use with nouns which do not express temporal concepts, cf. **während des Morgens, *während der Nacht* and is in this respect similar to *bei*, cf. 3.4. However, this is not true without further reservation, cf. Schanen & Confais (1986:458):

während der letzten Nacht ist der Kleine zweimal aufgewacht	*During the previous night the little boy woke up twice*

Or, cf. DUDEN (1976-81:2833):

während dreier Jahre verbrachten sie den Urlaub in Sylt	*Three years running they spent their holiday in Sylt*

A possible explanation is that *während* expresses a period, **not** a duration, within which a stevent occurs, and it is barred from occurrence in contexts which, as with unqualified time words, it might be open to interpretation as a duration. But the restrictions on the use of *während* require further investigation.

3.11 Accusative case = *for, #*

Die Schule blieb eine Woche geschlossen	*The school stayed shut for a week*
Den ganzen Tag lag er im Bett Ich war einen Monat (lang) in Kassel	*He stayed in bed the whole day I was in Kassel for a month*

The accusative of time, without a preposition, is employed where the duration of m = duration of s and there is no explicit link to the time axis, in particular not to the TOD. We would maintain that this is the case even with a present tense verb, as here a time adverbial is necessary to make the link to the time axis clear. Thus, a sentence like:

Ich bleibe den ganzen Abend zu Hause	*I'm staying at home the whole evening*

could be understood as referring to 'today' or 'tomorrow' (or any other evening in the near future) unless disambiguated by pragmatic factors or by an explicit adverbial such as *heute* 'today' or *morgen* 'tomorrow', etc.

Notes on the use of the 'accusative of time'

(I) As in Dutch, *lang* may be added for emphasis, and there is no real knowledge of the motivation for the use of *lang*, nor of any possible constraints on this use. It may, unlike Dutch, even occur with *Augenblick*, cf. 3.8.

(II) The accusative is a frequent alternative to the prepositions *in, an* or *auf/fr* under conditions which need further investigation.

3.12 *fr/auf = for*

Ich fahre (am Montag) fr/auf ein paar Tage in die Schweiz	*(On Monday), I'm going to Switzerland for a few days*

*für/auf*are used if the duration of m = duration of s and the period starts either at a given future point or, by default, at the TOD. The accusative is an occasional alternative, mainly in colloquial speech. Schmitz (1964:17) asserts that the temporal use of *für* presupposes some idea of purpose, as Brée et al. (1990:33) also suggest for Dutch *voor* in similar contexts. However, Schröder (1981:113) shows with a number of examples that this is not the case, and no consistent distinction can be identified between a phrase in the accusative and one with *für* on this basis. Any notion of purpose in sentences containing *für* is derived from other elements in the sentence rather than from the contrast between *für* and an accusative. Thus, we should regard sentences like the following pair as register-dependent alternatives:

Ich gehe jetzt eine halbe Stunde ins Café	*Iam going down the pub for half an hour*
Ich gehe jetzt für eine halbe Stunte ins Café	

In general, *auf* may most plausibly be seen as a rather more formal alternative to *für*, despite the assertion to the contrary by Scmitz (1964:58). However, the exact distribution of these prepositions is not absolutely clear and requires further investigation on the basis of a sufficiently large and reliable body of data.

3.13 *seit = for, since*

Ich arbeite seit vier Wochen hier	*I've been working here for four weeks*
Ich arbeite seit Ostern hier	*I've been working here since Easter*

No more than with *bis* does it seem appropriate to think in terms of distinct 'meanings' for *seit*, which indicates:

(a) a substate of given duration (= m) ending at the TOD

(b) that m continues over a period from s to the TOD

Common to both uses is the notion of 'up-to-now', i.e. the marking of a range of time ending at the TOD, and *seit* may be followed by an indication of the duration **or** by the starting point of s. This range of meaning is not easy to accommodate within the decision trees given in Brée et al. (1990). A possible solution, as with *bis*, could be to link up English *since* and *for* (and Dutch *sinds* and *al*) in terms of m=s. However, one must then consider whether *since* actually does involve temporal ordering, or whether it expresses the simultaneity of m and s. At all events, the similarity of this case to that of *bis* suggests that there may be an interesting generalisation to be drawn from the behaviour of *bis* and *seit* and their English equivalents.

3.14 *vor = before, ago.*

Ich komme vor Weihnachten	*I'm coming before Christmas*
Ich war vor zwei Jahren hier	*I was here two years ago*

vor, too, is ambiguous from the point of view of English, and the sense 'ago' does not occur in the data of Brée et al. (1990), because it is not expressed by a preposition in Dutch or English (cf. Dutch *twee jaar geleden*).

In examples like the first we are dealing with temporal ordering, in that m falls in a period preceding s. It corresponds to English *before* and Dutch *voor* - although it may be noted that the latter can be multiply ambiguous. Compare:

Ik ga er voor twee weken naar toe	*I'm going there for three weeks*
Komt hij inderdaad voor half zeven?	*Is he really coming before half past six?*

In examples like the second, m is related to the TOD; *vor* indicates a point on the time axis this duration prior to the TOD. It is the converse of *in* - or of Dutch *over*, which is omitted from the selection tree in Brée et al. (1990).

Both uses of *vor* involve the specification of a period prior to a point of reference - in the first case given after *vor*, in the second the TOD. It would seem desirable to conflate them in the decision tree.

4 Temporal ordering

A characteristic of English, which is only partly shared with German (and quite distinct from Dutch), is that many of the lexemes which express temporal ordering (e.g. *after, before, since*) may be used either as conjunctions or prepositions. It seems clear, if theoretically rather interesting, that this distinction is a relatively low-level one, made at a relatively late point on the decision tree. However, as German tends to make the distinction (although the individual lexemes are often derivationally related), it is convenient to present them separately in the first instance.

In general, temporal ordering involves fairly straightforward equivalents between German and English:

4.1 Prepositions

nach = after, later

nach vierzehn Tagen	*after a fortnight/ a fortnight later*

(indicating the beginning of a range in which m occurs relative to the TOD)

zwischen...und = between...and

zwischen sieben und acht	*between seven and eight*

(m sandwiched between two sub stevents)

von...bis = from...to

von acht bis neun	*from eight to nine*

(m lasts over whole period between two sub stevents)

von...(an)/ab = from...(on)

von 1975 (an), ab 1975	*from 1975 (on)*

(giving starting point for s)

4.2 Conjunctions

nachdem = after

Die Probleme hŁuften sich, nachdem wir die Grenze passiert hatten	*The problems mounted up after we had crossed the frontier*

bevor = before

Ich will das Fenster reparieren, bevor ich in Urlaub gehe	*I want to fix the window before I go on holiday*

NB: *ehe* is synonymous with *bevor*; it is restricted to literary and formal registers.

bis = until, by the time

Ich warte hier, bis du zurückkomms	*I'll wait here until you get back*
Bis du zurückkommst, habe ich das Fenster repariert	*I'll have fixed the window by the time you get back*

seit(dem) = since

Er wohnt in einem Hotel, seit(dem) er sein Haus verkauft hat	*He's been living in a hotel since he sold his house*

The shorter form *seit*, homonymous with the preposition, is now more frequent than the traditional conjunction *seitdem*, despite the assertion to the contrary in Buscha (1989:98). It does not have the semantic range of the corresponding preposition, presumably because that range is not compatible with an event.

5 Designing the selection tree for German temporals

While it would have been possible to use the selection trees for English and Dutch temporals, as found in Brée et al (1990), for the German temporals, we have seen in the above analysis that this would have led to some difficulties:

- *während* would have appeared in two places, once instead of *while* and once instead of *during*. These are separated too early in the English selection tree.
- *bis* would have occurred in two places, once instead of *by* and once instead of *until*. These are separated at the first decision point in the English tree!

We have decided to make changes to avoid these double occurrences.

5.1 Differences with the English selection tree

In the first place the distinction between event and state when the sub stevent sets the time for the matrix stevent, found in the English and Dutch trees (top half), will be dropped. This distinction turns out not to be felicitous. In the English and Dutch trees it corresponded to the use of a subordinating conjunction (event) versus a preposition (state). However, subordinating conjunctions can be used to introduce states as well as events, e.g.

When the rod is white hot, it is malleable.

Further, the distinction between prepositions and subordinating conjunctions hardly exists in the other (bottom) half of the selection trees, i.e. when the sub stevent is used to set one end of a time range for the matrix stevent. So in the m=s branch this distinction will be placed lower in the German selection tree. As *während* can be used both as a preposition and a subordinating conjunction, no distinction will have to be made when the sub stevent is a period. When the sub stevent is a point, then the distinction has to be made immediately.

Another anomaly in the English and Dutch selection trees was the placing of *by* and *tegen* in the top half of the tree, in which the matrix stevent time is set to that of the sub stevent time. Rather, for both *by* and *tegen* the matrix stevent should occur sometime before the sub stevent time. In German *bis* is used for this. *Bis* is also used for the main stevent occurring for the whole of the period from the TOD to the sub stevent time. In English this is the function of *until*, which is in the other half of the tree from *by*, and similarly for Dutch *tot* and *tegen*! We will place both situations in the same half (˜m=s) of the German tree.

A related issue is the place of English *for*. Currently it is shown as signifying that m=s, and so is in the 'top' half of the tree, and that the duration of m = duration of s. However, its equivalents in German are the simple accusative unless the period of m is related to the TOD. If m is related to the TOD then if m ends at the TOD, the German uses *seit* (cf. Dutch *al*) and if it begins at the TOD then it uses *für* or *auf*. Now *seit* is also used for English *since* which occurs in the 'bottom' (˜m=s) half of the tree! So once again there is an indication to move *for* from the top (m=s) half to the bottom (˜m=s) half of the tree. However, when German uses the accusative for a pure duration, as in:

Ich war einen Monat in Kassel	*I was in Kassel (for) a month*

then there would seem no reason to place this in the bottom (˜m=s) half of the tree.

The situation when the sub stevent is a pure time duration does not lend itself to the same decision criteria as are suitable for the case when the sub stevent is really a point, period or event. This is so, despite the fact that the same temporal prepositions are used! This is an unhappy state of affairs, which needs to be resolved. We give rules for the selection of a preposition with pure duratives in 5.3.

The simple distinction found in the English tree for m=s when s is a state, viz a choice between the sub stevent being a point, from a series or having duration, is not sufficient for German, just as it was not for Dutch. However the solution used for Dutch is also unsatisfactory since some prepositions, e.g. *al, binnen*, would be better placed in the other half of the tree. We propose that the first decision in the top (m=s) half of the tree should do most of the work. It as at this level that not only points, days and periods should be distinguished but also duration and simple events, i.e. events expressible without using a sub clause. This first decision point will be on the nature of the sub stevent: is it a point, a (part of a) day, a pure duration, a simple event or a period.

In the lower (~m=s) half of the tree , the only change is the introduction of *für/auf* and *bis* (as equivalents for English *for* and *by*). The two uses of *seit* (in English *since* and ... *ago*) are naturally captured. It is the English tree which needs adjusting.

We are now in a position to propose the selection tree for German temporals. To have an overview from which to work, we present in summary form the information from the previous sections, ordered by the role that the sub stevent is playing in setting the time of the matrix stevent (see table 3).

5.2 The German selection tree

The first distinction to be made is the well known one between the sub stevent setting the time of the matrix stevent, or setting one or more ends of the matrix stevent. In the latter case the other end of the matrix stevent is either open, set by the TOD or by another sub stevent.

For the case when the sub stevent sets the time of the matrix stevent we have first to decide on the type of sub stevent:

- If the sub stevent is a point, which is
  - a clock time, use *um*;
  - a religious feast, or a phrase using *Zeit* or *Stunde* referring to a point of time, use *zu*;
  - represented by a clause:
    - if the sub clause indicates a single event in the past, then use *als* , unless the historic present tense is being used in the matrix clause, in which case use (optionally) *wie*;
    - otherwise, use *wenn*.
- If the sub stevent is a (part of a) day of the week, or "the beginning/end" (*Anfang/Ende*) with no further specification of what is beginning or ending, use *an*.
- If the sub stevent is a pure duration, or "the beginning/middle/end of ..." something, (*Anfang/Mitte/Ende*), then use the accusative, with optional *lang*.
- If the sub stevent is a simple event involving more than simply temporal coincidence, expressed by a phrase, use *bei*.
- If the sub stevent is a period:
  - if the sub is NOT a phrase with a temporal term, use *während*;
  - otherwise use *in*, unless the duration of the matrix stevent is to be marked unambiguously as less than the duration of the sub stevent, use *innerhalb* or *binnen*.

For the case when the sub stevent marks one or more ends of the time in which the matrix stevent occurs, we have first to decide on the order of the matrix and sub stevents:

- If the matrix stevent occurs later than the sub stevent, then:

Table 3: Quick index to English, German and Dutch temporals, by type of sub stevent

Description	**English**	**German**	**Dutch**
S is a duration			
Cycle time of M = ‘every’ S	#	#+acc	#
Duration of M = S:			
M is a state/activity:	#/*for*	#+acc	#
& M $\leq$ =TOD	*for*	*seit*	*al*
& TOD$>$M	*for*	*für/ auf*	#
M is an accomplishment	*in*	*in*	*in*
M related to TOD:			
M $<$TOD + S	*within*	*innerhalb/ binnen*	*binnen*
M = TOD + S	*in*	*in*	*over*
M = TOD - S	... *before*	... zuvor	... *geleden*
M = now - S	... *ago*	*vor*	... *geleden*
S alone locates M on time axes			
S is a point:			
Clock time	*at*	*um*	*om*
”the beginning/end”	*at*	*an*	*aan*
”the beginning/end of...”	*at*	#+acc	#+acc/*aan*
S is an event:			
Simple point	*at*	*bei*	*bij*
Complex:			
once in past	*when/as*	*als*	*toen*
+historic present		*wie*	
otherwise	*when/ as*	*wenn*	*als/wäneer*
S is a whole/part of a day:			
Simple part, e.g. morning	*in*	*an*	*in*
Qualified part,e.g. fine morning	*on*	*an*	*op*
Definite day,e.g. Sunday	# *on*	#+gen/*an*	#/*op*
Indefinite day e.g. one Sunday	#	#+gen/*an*	*op*
S is a period:			
Simple	*in/during*	*in/während*	*in/tijdens*
Complex	*while*	*während*	*terwijl*
M falls in a period, one of more ends of which are indicated by S			
M is located on semi time axis:			
S $\leq$ M	*after*	nach(dem)	*na(dat)*
M $\leq$ S	*before*	*(be)vor*	*voor(dat)*
M is located in a time range:			
S $\leq$ M $\leq$ TOD	*since*	*seit(dem)*	*sinds*
TOD $\leq$ M $\leq$ S:			
& duration of M = S - TOD	*until/till*	*bis*	*tot(dat)*
& M occurs once	*by*	*bis*	*tegen*
S1 $\leq$ M $\leq$ S2:			
& duration of M = S2 - S1	*from ... to/until*	*von ... bis*	*van(af) ...tot*
& S1 $<$M $<$ S2	*between ... and*	*zwischen ...und*	tussen ... en

- if the TOD is an upper bound on the time range for the matrix stevent, use *seit*;
- otherwise use *nach*, or, if the sub stevent is a clause, *nachdem*.

- If the matrix stevent occurs earlier than the sub stevent, then:
  - if the lower bound on the time range for the matrix stevent is the TOD then use *bis*, unless the sub stevent is a pure time duration indicating the time prior to the TOD in which the matrix stevent occurs, then use *für* or *auf*;
  - otherwise use *vor*, or, if the sub stevent is a clause, *bevor*.
- If the matrix stevent is to occur in a range given by two sub stevents s1 and s2, then:
  - if it is to endure for the whole of the range from s1 to s2 then use *von* s1 *bis* s2;
  - otherwise use *zwischen* s1 *und* s2.

These rules are represented in Figure 3.

5.3 A note on the use of temporals with pure time duration

When the sub clause or phrase gives a pure time duration not connected to the time axis, e.g. *drei Monate*, three months, then the rules in the bottom half of the selection tree are not directly applicable. The data to be represented are shown in Table 3. There are three main cases:

- The sub stevent is the cycle time of the main stevent, e.g. *alle paar Jahre* 'every few years', in which case there is no preposition and the accusative case is used.
- The duration of the matrix stevent is equal to that of the sub stevent, then:
  - if the matrix is an activity or state, then:
    - if it is to take place for S time before the TOD, use *seit*;
    - if it is to take place for S time after the TOD, use *für* or *auf*;
    - otherwise, use the accusative with no preposition
  - if the matrix stevent is an accomplishment, use *in*.
    - The matrix stevent occurs at a time related to the TOD by s:
      - within a time S after the TOD, use *innerhalb* or *binnen*
      - at a time S after the TOD, use *in*;
      - later than a time S after the TOD, use *nach*
      - at a time S before the TOD, use *vor*.

These rules are depicted in Figure 4.

What is surprising is that this selection tree 'looks' so different from that used for selecting a temporal with a non-durative, as shown in Figure 3, yet the prepositions are largely the same! There must exist a better perspective that would make this overlap obvious.

6 Conclusion

We have seen that there is much similarity between the German use of temporals on the one hand and the English and Dutch on the other. However, there are some differences which are sufficiently large to require a quite different selection tree for the German prepositions. In particular in German:

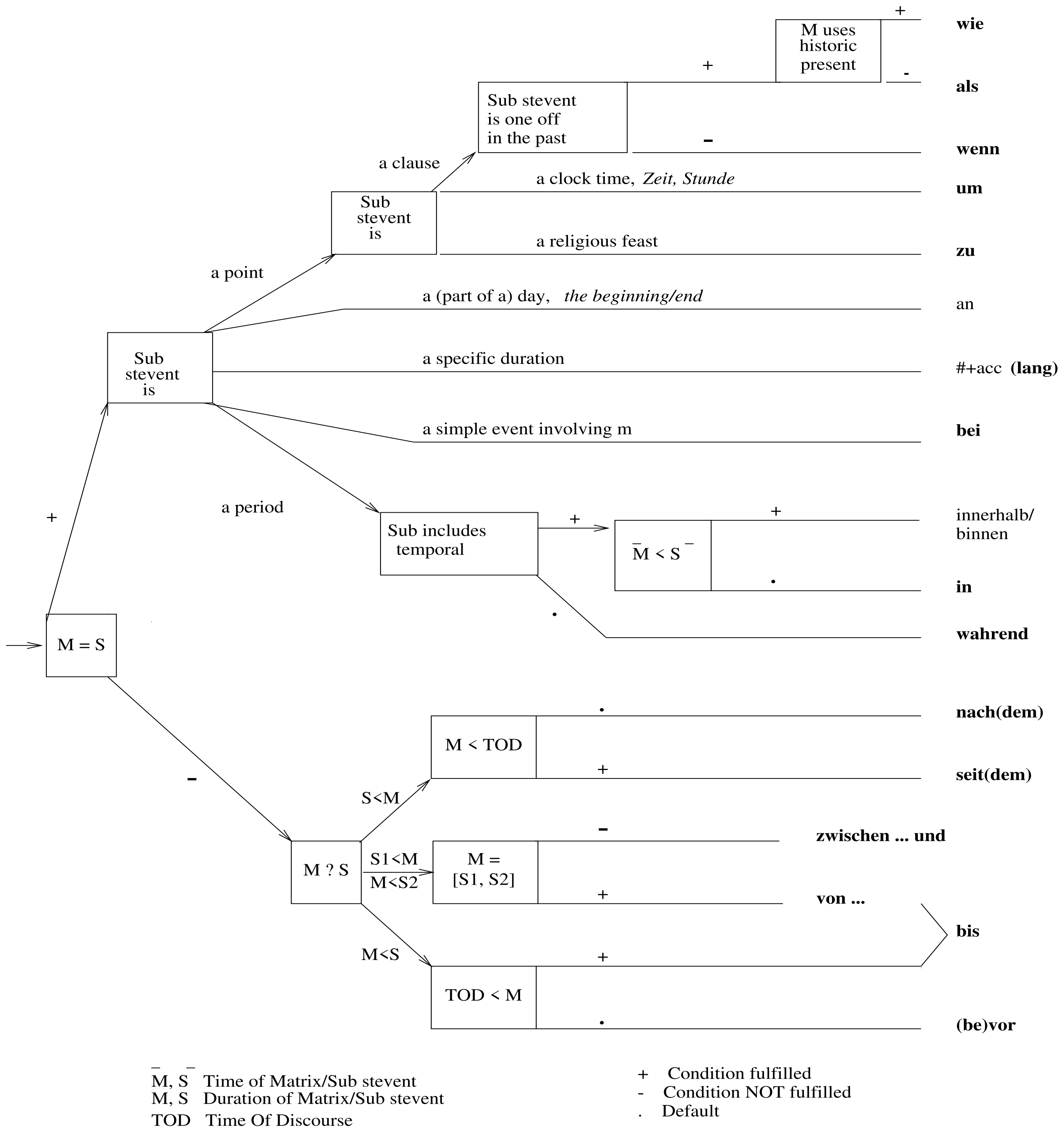


Figure 3: Selection tree for German non-durative use of temporals

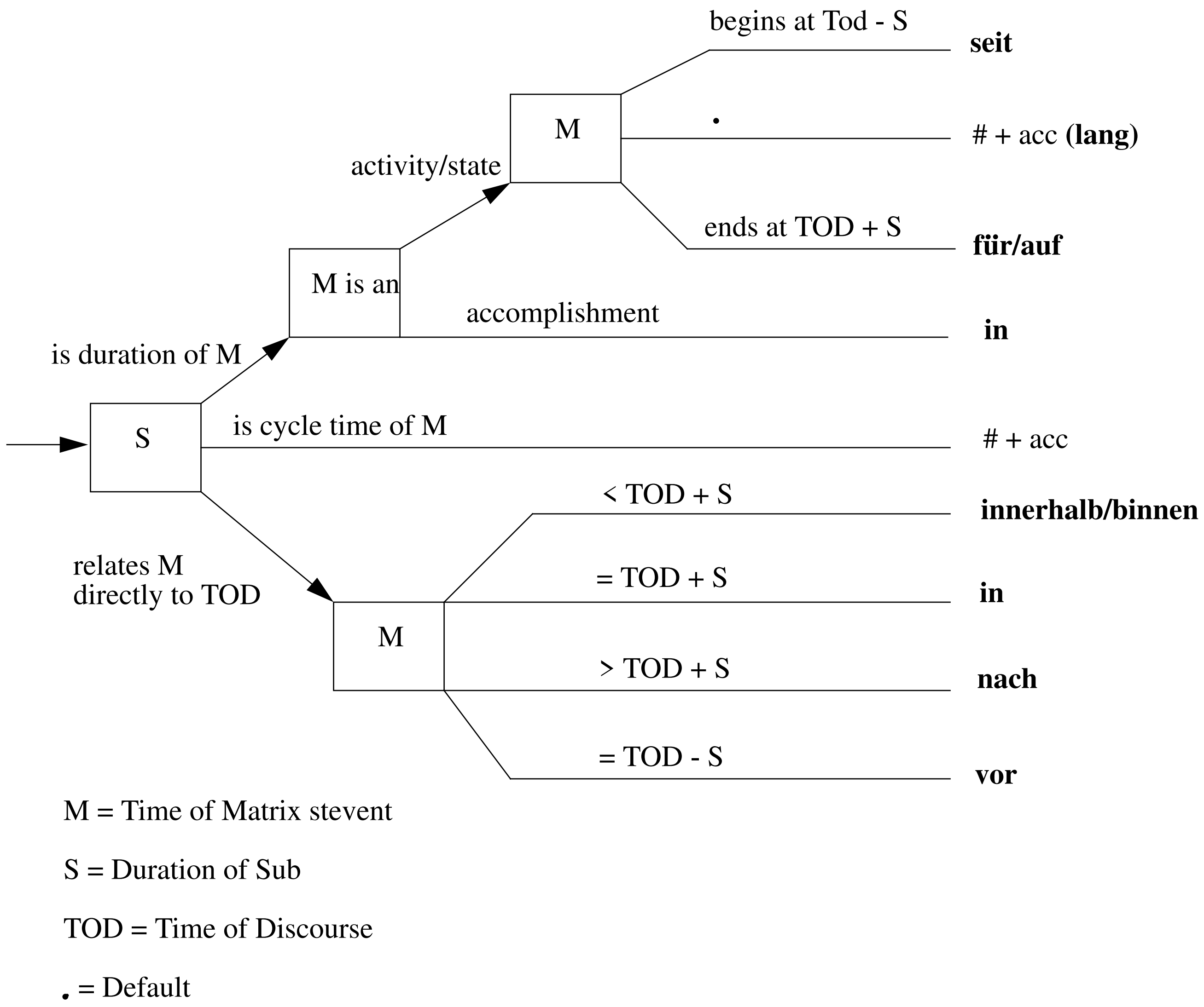


Figure 4: Selection tree for German durative use of temporals

- there is one word, *während*, that is both a preposition and a subordinating conjunction, whereas English and Dutch have separate words (*during/while* and *tijdens/terwijl*). This has forced the point for selecting between a temporal preposition and conjunction further down the German tree;
- there is one word, *bis*, which indicates the period from the TOD to S and does not distinguish whether the matrix stevent occurs for the whole of this period or simply within it (cf *until/by* and *tot/ tegen*). To be consistent with the German tree, it would be necessary to alter the English and Dutch trees to make *by* and *tegen* be in the bottom (m=s) halves, which would improve them;
- there is one word, *seit*, for the time period and the time duration before the TOD (cf *since/for* and *sinds/...al*). Again, in order to make the English and Dutch trees to be consistent with the German tree would require these words to be moved from the top to the bottom halves of the trees, which is possibly desirable;
- there are three words for indicating time durations, depending on whether or not the duration is before the TOD (*seit*), after the TOD (*für/auf*) or not related to the TOD (simple accusative), whereas there is only one word in English (*for*) and none in Dutch.

It has become clear that the selection trees proposed for English and Dutch could not select properly when the sub stevent was a pure duration. The greater number of words that accept pure duratives in German and the use of the same prepositions as for the non-duratives, has brought home that the selection criteria in the English and Dutch trees were not adequate for dealing with duratives. Two selection trees have been proposed for German, one for non- durative use and one for duratives. That almost all the temporals which occur with duratives are also used with non-duratives, means that we loose parsimony and break the design rule that each preposition must occur only once in the selection tree. However, pending a solution for incorporating both uses into one tree, we have been forced to present two trees.

On the positive side, the criteria used for the English and Dutch selection trees have been reused for the German tree. They have made at least one point of the German use of temporals clear, namely the reason why *Zeit* and *Stunde* expressions can be used either with *zu* or with *in*. The resolution is that this depends on whether the time or hour is regarded as a point (*zu*) or as a period (*in*). Moreover, the analysis of the German use of temporals has thrown light on the English and Dutch use and will lead to a revision of their selection trees.

The outstanding questions for the German selection tree, aside from how to combine the durative and non-durative use of the same temporals, are:

- to have a better distinction between *in* and *während* as a preposition;
- to find a distinction between *für* and *auf*, if one exists.

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