

Time adverbials in English and Norwegian news discourse

Hilde Hasselgård
University of Oslo

Abstract

This chapter examines time adverbials in English and Norwegian as evidenced in two corpora of news articles. The adverbials are identified through a manual, bottom-up procedure, and their syntactic realizations, semantic types and positions are analysed. The comparison includes the lexical realizations of time adverbials in both languages, partly through the lens of lexical priming. Similarities between the languages include the distribution of syntactic and semantic types of time adverbials. Cross-linguistic differences in adverbial placement are evident in clause-medial position, where English is more restrictive than Norwegian. The lexical comparison shows that the languages may differ in how similar meanings are realized. Furthermore, the lexical priming of some frequent lexical items reveals lexeme-specific and possibly register-specific patterns.

1. Introduction

Time adverbials are a pervasive feature of news discourse, which can be related to the communicative “focus on reporting current events” (Biber & Conrad 2009: 119). As in narrative text types, the use of time adverbials in news texts can serve to narrate sequences of events as well as (inferable) cause-effect relationships (Biber & Conrad 2009, Virtanen 2014). A special feature of newspaper texts is that they are normally designed to be read on the day of publication, which enables meaningful use and interpretation of deictic adverbials such as *yesterday*, *today*, and *last week*. Hoey (2005: 132) goes as far as to claim that “[n]ewspapers are more aware of their place in time than any other kind of discourse.” Example (1), in which the time adverbials have been highlighted, may serve as an initial illustration:

- (1) RETIRED factory worker Ted Whan’s life has been made hell by queues of bendy buses blocking his drive. The 75-year-old of Stornoway Road, Castle Vale, says he has suffered abuse and intimidation from drivers, had his car hit *twice* and *often* cannot get in or out of his garage. He had enjoyed free access to his garage, off Turnhouse Avenue, *for 35 years*, but *since last year* has *more often than not* had to wait for a bus to move *before he can come and go*. (BE06: A20)

This chapter presents a contrastive study of time adverbials in English and Norwegian news reports, based on comparable corpora (see Section 3). One aim is to survey cross-linguistic similarities and differences in syntactic and semantic types of time adverbials as well as in their placement. The framework for classifying and analysing adverbials and their positions relies on Hasselgård (2010); see also Biber et al. (1999). A second aim is to investigate recurrent lexical realizations of time adverbials with regard to their phraseological make-up and their potential patterns of lexical priming (Hoey 2005). To this end, I will investigate the collocational and colligational (syntactic) behavior of selected recurrent adverbials to see whether (and how) the patterns of similar lexicogrammatical items vary across the languages.

The research questions are as follows: What are the differences and similarities between time adverbials in English and Norwegian news discourse in terms of semantic types, syntactic realizations, and positions? What are the most common lexical realizations of time adverbials in both languages? Are there cross-linguistic differences in the lexical priming of frequent time adverbials in the news report register?

Temporal expressions have been found to be more frequent in Norwegian than in English (Ebeling & Ebeling 2017, Hasselgård 2017a). Although these previous studies have mainly been based on fictional texts, the expectation is that time adverbials will be more frequent in the Norwegian news reports, too. Adverbial placement is known to differ between Norwegian and English, and also to be register-dependent. (Biber et al. 1999; Hasselgård 2010, 2014a). It is therefore expected that initial and medial placement will be more frequent in Norwegian than in English (see further Section 2). The frequent use of deictic time adverbials in English newspapers was noted in Hasselgård (2010: 105), so this feature is expected to come up in the present material as well. However, it is difficult to formulate further hypotheses on other aspects of the lexical realizations of adverbials, as there are no previous studies of this.

In the remainder of this chapter, Section 2 outlines some relevant previous research, and Section 3 describes the material and the method used in the study. Section 4 describes the classificatory framework for the analysis before the corpus findings are presented in Section 5. Section 6 offers some further discussion and concluding remarks.

2. Some previous work on time adverbials

Much has been written about the linguistic expression of time in general and temporal adverbials in particular. According to the framework of Quirk et al. (1985), time adverbials belong to the category of ‘adjuncts’ (as opposed to ‘disjuncts’, ‘subjuncts’ and ‘conjuncts’; see Quirk et al. 1985: 504). In Biber et al. (1999) this category corresponds to ‘circumstance adverbials’

(as opposed to stance and linking adverbials). Circumstance adverbials are more integrated into the clause structure than the other two types, and “add information about the action or the state described in the clause, answering questions such as ‘How, When, Where, How much, To what extent?’ and ‘Why?’” (Biber et al. 1999: 763). Various studies have found time adverbials to be among the most frequent adverbial types, e.g. Biber et al. (1999: 983 ff.) and Hasselgård (2010: 34).

Time adverbials are a highly heterogeneous category in terms of syntactic realization and positional flexibility; see Section 4. They furthermore serve a variety of functions at clause level by locating events and situations in time. At discourse level, time adverbials may function as text-structuring devices, marking coherence and indicating text segmentation (Virtanen 2014: 106). This function is most prominent in clause-initial position (ibid.: 107), and is moreover “particularly visible in narrative passages where events may be structured along a time axis” (Hasselgård 2010: 216).

The above observations all come from studies of English, but it has been shown that clause-initial adverbials can be discourse-structuring devices in Norwegian too (e.g. Hasselgård 2014a). In the news material examined in Hasselgård (2014a), time adverbials have this function more often than other types of adjunct. In fact, Norwegian was found to make use of this resource more often than English (ibid.: 89), which correlated with a higher frequency of time relationship adjuncts (ibid.) as well as other time adverbials containing anaphoric elements (ibid.: 88). Hasselgård (2014a) studied primarily clause-initial adverbials; however, it was noted that the overall frequencies of adverbials, in all positions, were higher in Norwegian than in English in both fiction and news (ibid.: 79).

Other contrastive studies that discuss adverbials and/or other temporal expressions in English and Norwegian include Ebeling and Ebeling (2017) and Hasselgård (2017a, 2017b). Ebeling and Ebeling, using a parallel corpus of fictional texts, find that recurrent n-grams with temporal meaning are significantly more frequent in Norwegian than in English (2017: 22). Similarly, Hasselgård (2017a) shows that a larger proportion of recurrent n-grams are temporal in Norwegian than in English. It is observed that “a temporal n-gram is more likely to be clausal in Norwegian than in English, which might point in the direction of higher frequencies of both temporal adverbial clauses and time adverbs,” since clausal n-grams are often identified as temporal by the presence of a time adverb (2017a: 96 f.).

Hasselgård (2017b) studies the placement of adverbial clauses, including temporal ones, in English and Norwegian fiction and news. The two languages are found to be rather similar in this respect, preferring end position for most clause types (conditional ones being an exception), with initial position as the second-most frequent choice and very little use of medial position. The choice between initial and end position in both languages is linked to information structure: “adverbial clauses containing

anchored information are more likely to be sentence-initial, and those with new information are more likely to be sentence-final” (2017b: 137).

However, syntactic realization and semantic category are also important: non-finite clauses are less likely than finite ones to be initial, and only clauses denoting time and contingency were sufficiently frequent in both initial and final position to be subjected to a study of positional alternation. A problem of the 2017b study was that the material was very small. Hence, the present study uses slightly larger corpora, but see Section 3 for limitations.

To my knowledge, there are no usage-based, functional studies of time adverbials in Norwegian. However, the description of adverbials in Norwegian grammars such as Faarlund et al. (1997) and Holmes and Enger (2018) make it plausible that semantic and syntactic features of adverbials can be described in the same way for both languages in spite of the different classificatory frameworks in the reference grammars available. Further support for this is offered by Lindquist (1989), who applies the classificatory system of Quirk et al. (1985) to Swedish adverbials with only minor adaptations.¹ Note, however, that adverbial placement in Norwegian tends to be described in terms of a positional scheme originally conceived for Danish by Diderichsen (1962: 160 ff; see Holmes & Enger 2018: 411 for a recent application to Norwegian), or else within a generative framework (e.g. Nilsen 2000). See Section 4 for the classificatory framework used in the present study.

The last research question of this study concerns lexical priming. This is a theory developed by Hoey (2005) to “account for the existence of corpus linguistic phenomena such as collocation and colligation” (Hoey 2017: 3). The theory assumes that

every word is mentally **primed** for collocational use. As a word is acquired through encounters with it in speech and writing, it becomes cumulatively loaded with the contexts and co-texts in which it is encountered, and our knowledge of it includes the fact that it co-occurs with certain other words in certain kinds of context. (Hoey 2005: 8, emphasis in original).

For the present purposes, the most relevant points of Hoey’s claims about lexical priming are the following (numbered 1, 4 and 10 in Hoey 2005: 13):

- Every word is primed to occur with particular other words; these are its collocates.

¹ Swedish and Norwegian are lexically and syntactically similar enough to be mutually intelligible.

- Every word is primed to occur in (or avoid) certain grammatical positions, and to occur in (or avoid) certain grammatical functions; these are its colligations.
- Every word is primed to occur in, or avoid, certain positions within the discourse; these are its textual colligations.

In this study of time adverbials, the first two claims concern the phraseological make-up of expressions functioning as time adverbials and the third concerns the placement of individual adverbials. For example, in the phrase *sixty years ago today*, “*sixty* is typically primed for us to occur with *years*, *sixty years ago* is primed to occur as Adjunct, [and] *years* is primed to occur with NUMBER” (Hoey 2017: 19). Hoey also observes that the phrase typically occurs in sentence-initial and possibly text-initial position (2005: 131 f.). A further indication of the importance of the lexical item for the syntactic behaviour of adverbials is found in Dupont (2019: 244 ff.), who shows that individual contrastive conjuncts and conjunctions may have different lexical primings in both English and French.

It is also important to note Hoey’s corollary that all the claims about lexical priming “are in the first place constrained by domain and/or genre” (2005: 13). Words, and combinations of words, “are acquired wrapped in the contexts in which they are encountered” (Hoey 2017: 19). Hence, the primings should not be expected to work in exactly the same way across discourse types; nor across languages, as shown by Dupont (2019), although Hoey (2005, 2017) is concerned with English only.

3. Material and method

The material for this study consists of two collections of news articles from English and Norwegian newspapers. English is represented by the Press reportage section of the BE06 corpus (British English from 2006; see Baker 2009). This corpus was compiled according to the sampling frame of the Brown family of corpora and is thus a one-million-word corpus representing a variety of written genres (Baker 2009: 313). The Norwegian material is a self-compiled collection of news articles from 2011, sampled from online newspapers and the digital archive *Atekst*.² This material will be referred to as the NoN-corpus, short for ‘Norwegian Newspapers’ but also conceding that it is not a standard corpus. The two corpora are comparable in that both datasets have been sampled from a spread of newspapers (national and regional) and are relatively close to each other in time.

Analysing adverbials, without having predefined the forms to be studied, requires manual excerption (Hasselgård 2010: 6). For this reason, access to complete texts is essential, and the material needs to be limited in

² <https://www.retriever.no/product/mediarkiv/>

size for logistic reasons. The Press reportage category of the BE06 corpus contains 44 files of about 2000 words each (Baker 2009: 317). To make the analysis manageable I have used only the first 22 of these for the present study (texts A01–A22). These represent 17 different newspapers, i.e. five papers are represented with two files.³ The NoN-corpus contains about 23,200 words distributed over nine different newspapers, each contained in one file. The files vary in size from 1545 to 4873 running words (mean = 2582). Each file in both corpora contains more than one news article. Only the newspaper name is given as author in the BE06 documentation and metadata, but it is fair to assume that a number of different writers were involved. As for the Norwegian material, the available bylines reveal that texts may be single- or co-authored, and considering the fact that newspaper articles may be edited by somebody other than the original writer(s), the BE06 practice of listing the newspaper as author seems reasonable. See Table A in the appendix for a full list of the newspapers included, the number of words in each file and the text codes used in the reference tags of the corpus examples.

Since the investigation is based on comparable corpora, the *tertium comparationis*, i.e. the background of sameness for the cross-linguistic comparison (James 1980: 169) must rely on something other than translation evidence (Johansson 2007: 10), namely text comparability and common criteria for identifying the linguistic items under study (Hasselgård, forthcoming). As detailed in the presentation of the corpora, they match in field (news reportage), tenor (newspaper journalists to general public) and mode (written text published online). Furthermore, the time adverbials were identified in both languages on the basis of their temporal meaning and classified according to the same syntactic and functional framework, as explained in Section 4.

4. Classificatory framework for time adverbials

“Temporal adverbials are a rich and heterogeneous category, both in a formal and in a functional respect” (Klein 1994: 147). This section presents the classification schemes used for the current study in terms of formal realization (4.1), semantic categories (4.2) and syntactic positions (4.3). The classificatory framework comes from Hasselgård (2010), which builds on Quirk et al. (1985) and Biber et al. (1999). It was developed for English, but because of the great similarities in word order between Norwegian and English, it is easily adaptable to Norwegian, as has been demonstrated in previous studies such as Hasselgård (2014a) and by Lindquist (1989) for Swedish (see footnote 1). Some temporal adverbials serve mainly as markers of textual organization, or internal cohesion (Martin & Rose 2007:

³ The overview of BE06 files was found at <https://cqpweb.lancs.ac.uk/be2006/>.

133), referring to contrasts and continuities between portions of text rather than to the sequencing of events. Potential examples are *then* (see Lewis, present volume), *finally* and *at the same time*. When such adverbials were considered to primarily mark internal cohesion, they were regarded as conjuncts and excluded from the present investigation, which focuses on adjuncts (Hasselgård 2010: 35 f.).

4.1 Syntactic realization of time adjuncts

Time adjuncts have a wide range of syntactic realizations in both English and Norwegian, as listed below. The examples given are equivalent between the languages, unless otherwise stated.

- Single adverb, e.g. *now, already, usually*; *nå, allerede, vanligvis*
- Adverb phrase, e.g. *so far, earlier today*; *så langt, tidligere i dag*
- Prepositional phrase (PP), e.g. *in 2005, before midnight*; *i 2005, før midnatt*. Phrases with *ago* (e.g. *two weeks ago*) are also classified as PPs (Klein 1994: 148). The corresponding Norwegian construction has a split structure as in *for to uker siden* ('for two weeks siden').
- Noun phrase (NP), e.g. *last week, this month*; *forrige uke, denne måneden*
- Finite clause, e.g. *since the troops arrived, before it was closed*; *siden troppene kom, før det ble stengt*
- Non-finite clause (participle, infinitive, verbless). PPs with a non-finite clause as complement are included in this category (Hasselgård 2010: 37). Examples are *aged four, after taking office, while in a newsagent's*. Norwegian lacks a category that is equivalent to English *-ing* clauses, but can have an infinitive clause after a preposition as in *etter å ha vunnet to valg* ('after to have won two elections').

4.2 Semantic types of time adjuncts

Four types of time adjuncts are recognized in this study. They are listed below along with a brief explanation and one or more examples (see also Hasselgård 2010: 25).

- **Time position** adjuncts refer to a time at which something happened, either a point or a period of time. They are elicited by the probing question *when* (see the italicized part of example 2).
- **Time duration** adjuncts refer to a period over which something lasted and can mark the beginning, end or total span of that period. They are elicited by the probing question *for how long* (examples 3-4).

- **Time frequency** adjuncts refer to the number of occurrences or the regularity of an event. They are elicited by the probing question *how often / how many times*, as in the underlined part of (2).
- **Time relationship** adjuncts share many features of time position, but refer to a time that is seen in relation to another (Quirk et al. 1985: 550). Kučera and Trnka (1975: 7) refer to this group as ‘anaphoric time adverbials’. The probing question is *when* (in relation to another time), as in (5).

- (2) POLICE are hunting this man *after a 25-year-old was stabbed four times*... (BE06: A05)
- (3) They remain on the trust's register *until the age of 60*. (BE06: A16)
- (4) And the uncertainty is expected to continue *for weeks* ... (BE06: A02)
- (5) It *finally* succumbed after a failure to sell the Broadford works in the city centre. (BE06: A01)

4.3 Syntactic positions of time adjuncts

The syntactic positions of adjuncts are defined in relation to the verb phrase in the clause (Hasselgård 2010: 40 ff.). This means that only adjuncts belonging to a clause containing a verb have been included in the analysis. In contrast to English, Norwegian is a verb-second (V2) language, which means that some of the positions need to have slightly different definitions in the two languages, as detailed below:

Initial position (I) is before subject in English clauses except interrogatives. In Norwegian declarative main clauses, initial position is before the finite verb, as in English interrogatives, because the V2 constraint causes inversion of subject and finite when an adverbial occurs clause-initially. See examples (6) and (7).

- (6) *In 2002*, he was sentenced to a total of nine years in prison for two offences. (BE06: A12)
- (7) *På ei uke* er det over 50.000 som har lastet ned appen ... (NoN: KLA)
[‘*In a week* are there over 50,000 who have downloaded the app...’]⁴

⁴ Norwegian examples are followed by a fairly literal translation into English, enclosed in single quotes. The translations are sometimes deliberately unidiomatic in order to display the wording of the Norwegian example, while hopefully still making sense to readers who do not read Norwegian.

Medial position (M) is after the subject and before a final obligatory constituent. There are three variants of medial position:

- M1: between subject and the verb phrase. In Norwegian this position is only available in dependent clauses and in main clauses with subject-finite inversion, due to the V2 constraint in main declaratives (examples 8 and 9).
- M2: between an auxiliary and the main verb (examples 10 and 11).
- M3: between the main verb and an object, complement or obligatory adjunct (examples 12 and 13).

- (8) The couple *now* has five grandchildren. (BE06: A18)
- (9) ... at du *allerede* abonnerer på bredbånd. (NoN: VG)
[‘...that you *already* subscribe to broadband.’]
- (10) But it has *rarely* been profitable... (BE06: A07)
- (11) Forskerne har *lenge* vært enige om at... (NoN: AP)
[‘The researchers have *long* agreed that...’]
- (12) Mr Atif said he asked *later* what the hydrogen peroxide was for. (BE06: A21)
- (13) Stadig færre nordmenn har *nå* fasttelefon hjemme. (NoN: VG)
[‘Ever fewer Norwegians have *now* landline-phones at home’]

End position (E) is the position after all (other) obligatory constituents; see examples (14) and (15).

- (14) The attack happened *as the bus travelled past Highgate Underground station in Archway Road*. (BE06: A05)
- (15) En av tre svarte nei *i 2009*. (NoN: NAT)
[‘One of three answered no in 2009.’]

5. Analysis

5.1 General corpus frequencies

Time adjuncts are numerous in both corpora, thus confirming their importance in the news reportage register. Contrary to expectation, however, the overall frequency of time adjuncts is only marginally higher in Norwegian than in English, as shown in Table 1, and the difference is not statistically significant (LL=1.13, $p>0.05$).

Table 1. The frequencies of time adjuncts in the corpora

	Corpus size	Time adjuncts (N)	Per 10,000 words
BE06	43,642	1,100	252.0
Norwegian news (NoN)	23,239	618	265.9

Time adjuncts occur in all the corpus files (see overview in the Appendix), but with varying frequencies. Figure 1 shows a boxplot of the dispersion (normalized per 1,000 words for each file).⁵ It can be observed that both the mean and the median are slightly higher for Norwegian. The lowest value is also higher for Norwegian than for English but the highest values are similar (35 per 1,000 words in English and 34 in Norwegian). The smaller interquartile range in Norwegian is most likely due to the smaller number of texts in the NoN-corpus.

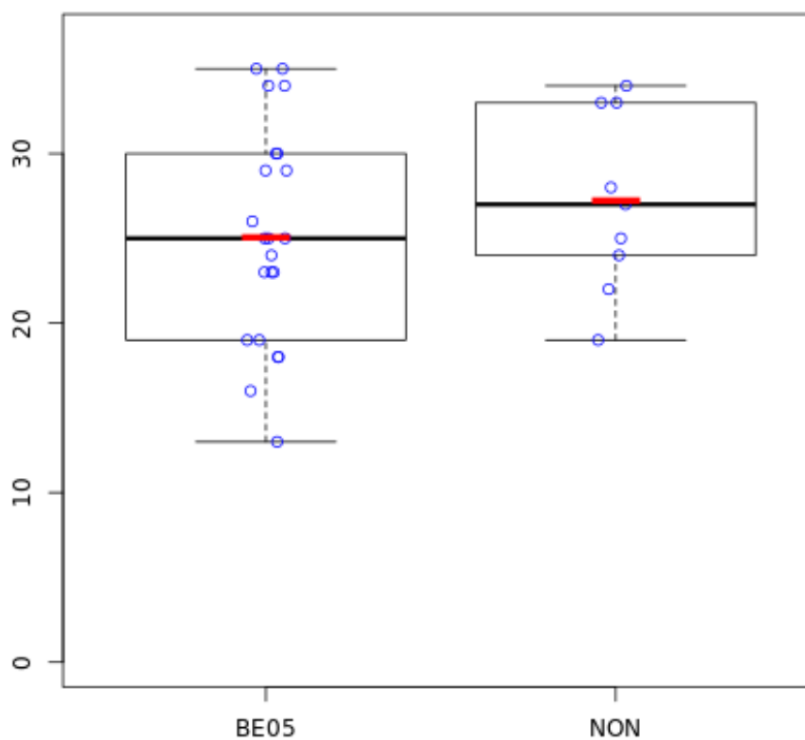


Figure 1. The dispersion of time adjuncts across corpus texts in English and Norwegian

⁵ The boxplots in this chapter were made with Lancaster Stats Tools Online (Brezina 2018; <http://corpora.lancs.ac.uk/stats/toolbox.php>).

5.2 Syntactic and semantic categories of time adjuncts

This section presents the distribution of syntactic and semantic types of time adjuncts in both corpora. Figure 2 shows that the distribution of realization types is very similar between the languages. BE06 has a slightly higher proportion of clauses, particularly non-finite ones, of which the Norwegian material only has three (all infinitive clauses). All the realization types occur in all the files in both languages except non-finite clauses, which occur in 17 out of the 22 BE06 files and three NoN files.

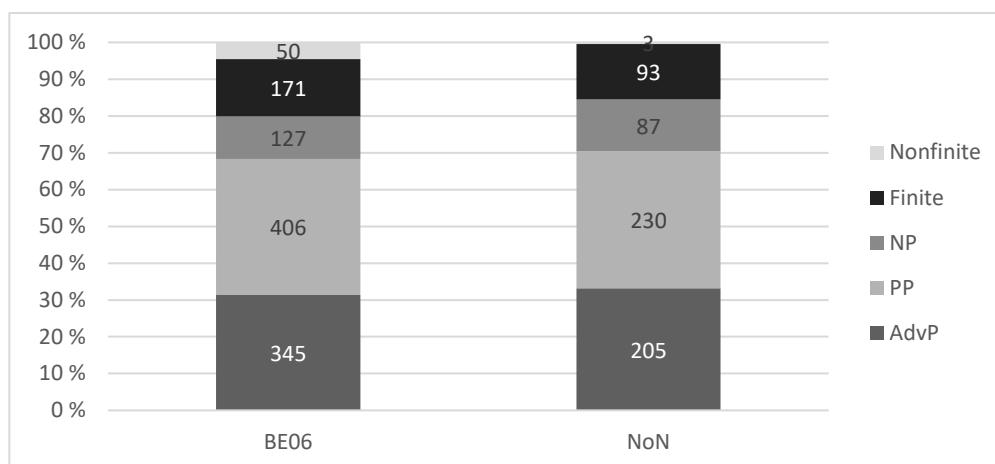


Figure 2. Realizations of time adjuncts in English and Norwegian

The proportions of realization types come out as similar, but it should be noted that equivalent meanings may be realized by different form classes. One difference consists in English adverbs corresponding to Norwegian prepositional phrases (albeit lexicalized ones) in the expressions *yesterday/i går*, *today/i dag*, and *tomorrow/i morgen*;⁶ see examples (16) and (17). Another is references to weekdays, consistently realized by PPs in the English material and by NPs in the Norwegian material, as in (18) and (19); see further Section 5.5.

- (16) BRITAIN is finally falling out of love with the credit card, figures showed *yesterday*. (BE06: A21)
- (17) *I går* la de frem 2010-rapporten. (NoN: AP)
[‘Yesterday they presented the 2010 report.’]
- (18) Hungary was plunged into crisis *on Monday* ... (BE06: A22)
- (19) Utplasseringen skjedde *tirsdag*. (NoN: NAT)
[‘The deployment happened Tuesday.’]

⁶ According to the *OED* online (entry for *tomorrow*), *today* and *tomorrow* also originated as PPs, and could earlier be written as two words or with a hyphen.

In the case of non-finite clauses, English uses two types that have no equivalent in Norwegian, namely *-ing* clauses, which may be augmented by a preposition, as in (20), and past participle clauses introduced by a conjunction as in (21). The only type of non-finite clause functioning as a time adjunct in Norwegian is shown in (22). This construction, with a preposition (*etter* ‘after’) followed by an infinitive, would be ungrammatical in English. It may be an appropriate counterpart of the ‘*after V-ing*’ construction in (20). However, it is infrequent in the NoN corpus, with only three occurrences, whereas the analogous finite construction *etter* + /*that*-clause occurs 14 times.

- (20) Our pupils did come back early *after finishing one of the exercises they had gone there to do*. (BE06: A20)
- (21) *When asked about the contracts with private firms*, the spokesman added:... (BE06: A03)
- (22) Som alternativ har vi et sterkt folkelig mandat *etter å ha vunnet to valg*. (NoN: KLA)
[‘As alternative have we a strong popular mandate after to have won two elections.’]

The distribution of semantic types of time adjuncts is shown in Table 2. The ranked frequencies of the semantic types are identical across the languages, and their proportions are similar. It is natural that time position is the most frequent adjunct type in news reporting given the communicative focus of this register. All the semantic categories were found in all the corpus files except frequency, which was absent in three BE06 files (A03, A11 and A21).

Table 2. Distribution of semantic types

	BE06		NoN	
	N	%	N	%
Time position	714	64.9	378	61.2
Time duration	132	12.0	70	11.3
Time frequency	71	6.5	44	7.1
Time relationship	183	16.6	126	20.4
	1100	100	618	100

Figure 3 shows the dispersion of the semantic types of time adjuncts across corpus files, with numbers normalized per 2,000 words. The patterns are remarkably similar for position, duration and frequency adjuncts, while relationship adjuncts have a much higher mean frequency as well as greater variation across files in Norwegian than in English.

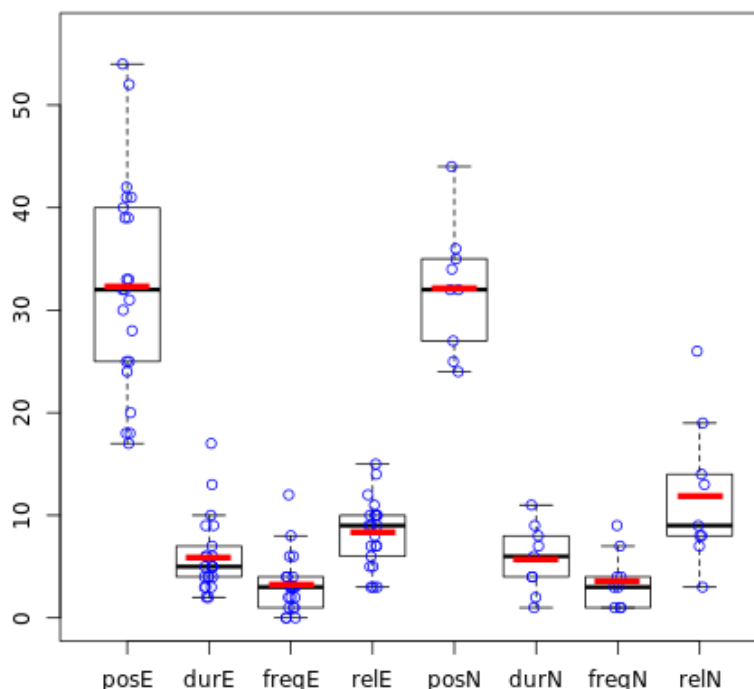


Figure 3. Dispersion of semantic types of time adjunct across corpus files. Normalized frequencies per 2,000 words. English to the left, Norwegian to the right (key to abbreviations: position, duration, frequency, relationship)

5.3 The positions of time adjuncts

Contrastive grammars as well as previous studies of adverbial placement have indicated that adverbial positions differ between English and Scandinavian languages (Norwegian/Swedish) (e.g. Johansson & Lysvåg 1987: 261ff, Lindquist 1989, Altenberg 2010, Hasselgård 2014a). As shown in Figure 3, this is also the case in the present material. The left half of the figure shows the distribution of initial, medial and end position in BE06 calculated as a percentage of the total number of time adjuncts per text, and the right half shows the corresponding distribution in the NoN-corpus. The median and the mean for initial and medial positions are lower in English than in Norwegian, while those for end position are higher. The greater interquartile ranges observed for English are again taken to reflect the greater number of files. A log likelihood test indicates that the aggregate proportions of initial, medial and end position differ significantly across the corpora (LL=20.08, $p < 0.0001$, Cramer's $V = 0.1084$).⁷

⁷ The three variants of M were collapsed and cleft position was merged with 'end' in this calculation, performed with the UCREL Significance Test System at <http://corpora.lancs.ac.uk/sigtest/>.

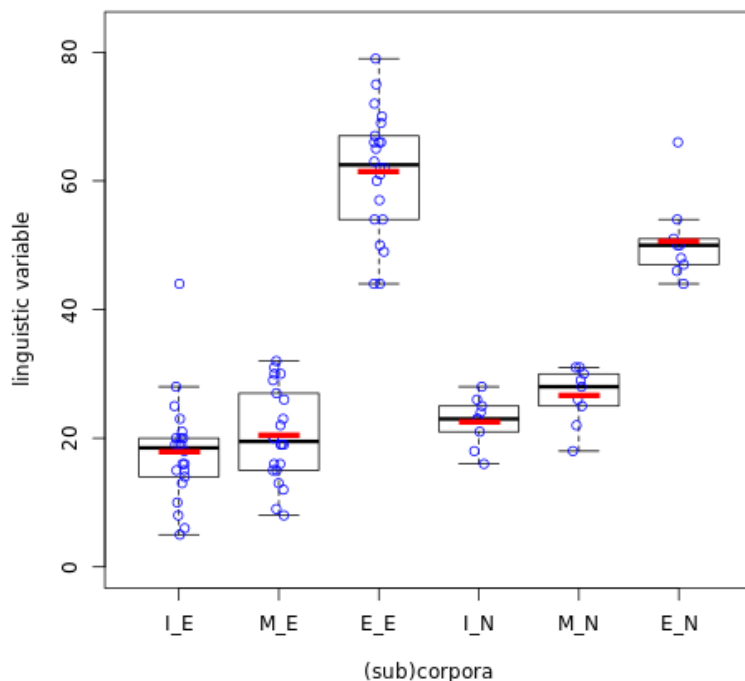


Figure 4. Positions of time adjuncts in BE06 and NoN (percentages of initial, medial and end position per corpus file)

Besides the fact that medial positions are more frequent in Norwegian, the two languages differ as to the type of medial position they prefer, as shown in Table 3. For example, M2 is the most frequent choice in English but the least frequent in Norwegian. It follows from the definition of the medial positions (Section 4) that M2, between an auxiliary and the lexical verb, is available only in complex verb phrases. An examination of the clauses with medial adjuncts reveals that M2 is preferred in clauses with a complex verb phrase (90% in English and 66% in Norwegian). However, in simple verb phrases, British English has a slight preference for M1 over M3 (56% vs. 44%), while Norwegian shows the opposite preference (41% M1 vs. 59% M3).

Table 3. Positions of time adjuncts in BE06 and NoN (raw numbers)

	Initial	M1	M2	M3	E	cleft	
BE06	197	72	91	54	686	0	1100
NoN	138	62	41	60	311	6	618

The cleft position, merged with end position in Figure 4 but shown separately in Table 3, was found only in Norwegian in the present material;

see (23). However, this placement may occur in English too (Hasselgård 2010: 44), as the (idiomatic) translation of (23) demonstrates.

- (23) Jacobsen forteller at det var *først i fjor* at VG mobil ble et eget selskap... (NoN: KLA).
 ['Jacobsen says that it was only last year that VG mobile became a separate company']

The various syntactic and semantic categories of time adjuncts have different positional preferences, as shown in Figures 5 and 6. Figure 5 shows a high degree of similarity between the two languages. Adjuncts realized by adverb phrases are the only type to prefer medial positions in both languages; all other realization types are most frequently found in end position. Prepositional phrases differ the most between the languages: for English PPs, medial position is marginal, but it is used for about 20% of the Norwegian PPs, which suggests that medial PPs are less marked in Norwegian than in English. A similar pattern is seen with NPs, though not as clearly (most likely due to the idiosyncratic behaviour of the NP *last night*, as discussed below). Clauses prefer end position in about $\frac{3}{4}$ of the cases in both languages and otherwise tend to go for initial position (see also Hasselgård 2017b).

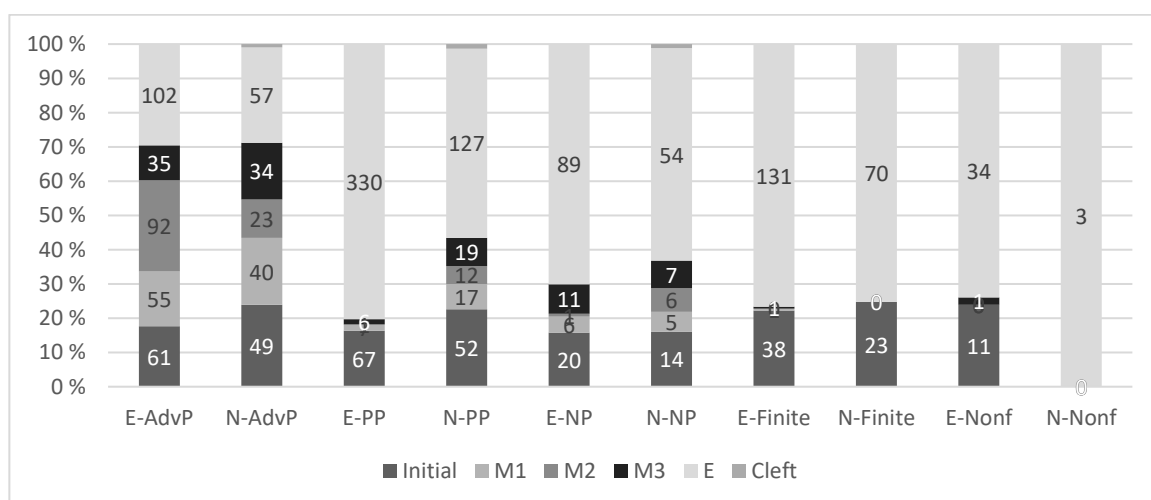


Figure 5. Positions of realization types of time adjuncts

Figure 6 shows that the semantic types differ in their positional preferences in both languages. The figure also reveals some cross-linguistic differences. While the patterns for frequency and relationship adjuncts are relatively similar between the languages, medial positions are used more often for position and duration adjuncts in Norwegian than in English. It may be noted that frequency and relationship adjuncts tend to be realized by adverb

phrases, and thus display similar positional patterns to those of AdvPs in Figure 5.

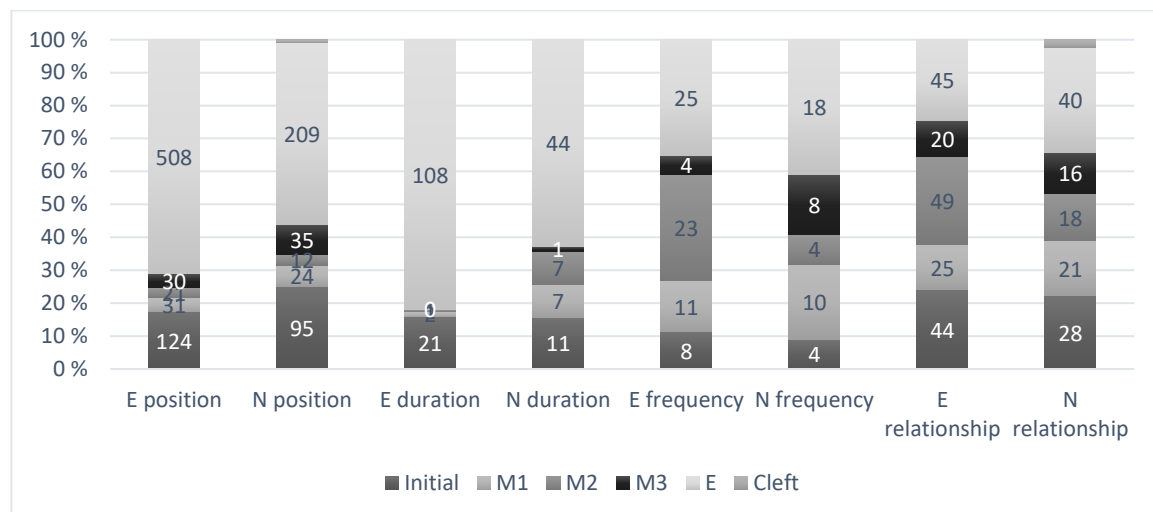


Figure 6. Positions of semantic types of time adjuncts

As noted above, English and Norwegian differ as to the frequency with which prepositional phrases appear in medial position. One reason for this is the frequent use of PPs denoting time position, such as *i går* ('yesterday') and *i morgen* ('tomorrow'); see further next section. However, medial position in Norwegian also accommodates longer PPs rather painlessly, as in (24). This is in contrast to English medial position, which tends to employ some sort of parenthetical marking (Hasselgård 2010: 107 f.) except in M3 position before a heavy post-verbal constituent, as in (25).

- (24) Franske politikere fra både høyre og venstre har *i flere tiår* latt seg invitere på gratis opphold i land som Marokko, Tunisia og Egypt... (NoN: ADR)
 ['French politicians from both right and left have *for many decades* let themselves be invited to free stays in countries like Morocco, Tunisia and Egypt...']
- (25) The YEP reported *in November* how Enid, 31, is being given sanctuary in All Hallows Church in Hyde Park, Leeds... (BE06: A11)

5.4 The lexical realizations of time adjuncts

This section examines lexical realizations of time adjuncts in order to discover patterns of recurring lexis and phraseology. Table 4 shows the 20 most frequent lexical types in both languages. The lexical items in shaded cells have a translational counterpart in the top 20 list in the other corpus. The realization types have been somewhat generalized by representing some

of them as colligations (e.g. *when*-clause, *after* NP). Furthermore, numbers have been replaced by # (thus “in #####” represents e.g. “in 2006” and “on ## MONTH” e.g. “on 6 February”) and names of weekdays and months by the words WEEKDAY/UKEDAG and MONTH/MÅNED.

Table 4. Lexical realizations of time adjuncts in English and Norwegian (raw numbers (#) and frequencies per 10,000 words)

Rank	BE06			NoN			Gloss
	#	/10k	Item	#	/10k	Item	
1	75	17.2	<i>when</i> -clause	46	19.8	<i>nå</i>	‘now’
2	60	13.7	<i>after</i> -clause	32	13.8	<i>da</i> -clause	‘when-clause’
3	52	11.9	<i>yesterday</i>	24	10.3	UKEDAG	‘WEEKDAY’
4	39	8.9	<i>after</i> _NP	22	9.5	<i>etter</i> NP	‘after NP’
5	34	7.8	<i>today</i>	22	9.5	<i>når</i> -clause	‘when-clause’
6	33	7.6	<i>now</i>	17	7.3	<i>i går</i>	‘yesterday’
7	32	7.3	<i>last night</i>	16	6.9	<i>i #####</i>	‘in #####’
8	29	6.6	<i>in #####</i>	15	6.5	<i>etter-at</i> -clause	‘after (that)-clause’
9	27	6.2	<i>as</i> -clause	12	5.2	<i>da</i>	‘then’
10	21	4.8	<i>before</i> -clause	12	5.2	<i>i dag</i>	‘today’
11	21	4.8	<i>then</i>	11	4.7	<i>samtidig</i>	‘at the same time’
12	19	4.4	<i>still</i>	10	4.3	<i>for_siden</i>	‘_ ago’
13	18	4.1	<i>never</i>	8	3.4	<i>fortsatt</i>	‘still’
14	17	3.9	<i>already</i>	8	3.4	<i>i løpet av</i> NP	‘in the course of NP’
15	15	3.4	<i>during</i> NP	8	3.4	<i>tidligere</i>	‘earlier’
16	15	3.4	<i>following</i> _NP	8	3.4	## MÅNED	‘## MONTH’
17	15	3.4	<i>in</i> _MONTH	7	3.0	<i>deretter</i>	‘thereafter’
18	15	3.4	<i>on</i> WEEKDAY	6	2.6	<i>først</i>	‘first’
19	14	3.2	<i>in</i> NP	6	2.6	<i>i_MÅNED_#####</i>	‘in MONTH #####’
20	12	2.7	## years ago	6	2.6	<i>lenge</i>	‘for a long time’
	12	2.7	<i>on</i> _MONTH_##				
	12	2.7	<i>while</i> -clause				

The degree of recurrence of lexical items (per 10,000 words) is similar between the languages: the top Norwegian item (*nå*) is slightly more frequent than the top English one (*when*-clause), but the frequencies from rank 2 to 20 differ little between the languages. It is noteworthy that the two most frequent English items are clauses while the Norwegian list starts with a simplex. However, Norwegian clauses with *da* and *når* (ranks 2 and 4) both correspond to English *when*-clauses (although they are not interchangeable), and the combined frequency of *da/når* far exceeds that of

when. *After*-clauses are, by contrast, rather more frequent than their closest Norwegian counterpart, *etter-at*-clauses (rank 8).

More than half of the top-20 items occur in shaded cells, which points to substantial similarity between the languages as regards the composition of news reports. Most of the shared items are realized in English by adverbs (some of which correspond to Norwegian PPs, such as *today/i dag*) or PPs (two of which correspond to Norwegian NPs (*on WEEKDAY* and *on MONTH ##* vs. *WEEKDAY* and *## MONTH*). Semantically, all of the shared top-20 items are time position and relationship adjuncts.

Looking beyond the top 20 lists, we find only a small number of complete recurrent multi-word time expressions in the material. Those that occur more than once per 10,000 words and in at least two corpus files are listed below (in descending order of frequency). Their raw frequencies range from 32 to 5 in English and from 17 to 3 in Norwegian.

- English: *last night, last year, for the first time, at the time, next year, this year, this week, last month, last week*
- Norwegian: *i går, i dag, i fjor, i går kveld, flere ganger, i høst, så langt, hele tiden, denne uken* [‘yesterday, today, last year, last night, several times, this autumn, so far, all the time, this week’]

The two lists show different collocational and colligational patterns, above all that most of the English items are NPs and most of the Norwegian ones are PPs. This is partly explained by the fact that English has productive patterns with a determiner (*last, this, next*) + a time-noun while Norwegian typically uses the preposition *i* + time-noun in the most recurrent expressions such as *i går* (‘yesterday’), *i dag* (‘today’), *i fjor* (‘last year’). Examples (26) and (27) may serve as illustrations.

- (26) *I fjor* var det 85 fødsler på Lærdal sjukehus,... (NoN: AP)
[‘Last year were there 85 births at Lærdal hospital...’]
- (27) EMI sales fell 10 per cent *last year*. (BE06: A13)

5.5 Lexical priming

This part of the investigation concerns cross-linguistic patterns of lexical priming (Hoey 2005) in the case of time adjuncts. To this end, I will examine the collocational, colligational and positional behaviour of the most recurrent lexical realizations of time adjuncts in both languages, represented by the two most frequent types of simplex, phrase and clause. The selection of the most frequent expressions is motivated by the fact that only recurrent expressions are able to display any kind of pattern. However, to expand the empirical base, I also consult other corpora of English and Norwegian speech and writing. Information on these corpora can be found at the end of the References section. Collocation and colligation are considered only

insofar as the phraseological make-up of the time adjuncts is concerned, not with regard to their wider context (see Section 2). The textual colligation of the adjuncts (Hoey 2005: 13) is operationalized here to concern their position in the clause.

Table 5 displays the adjuncts selected for this part of the study along with their raw frequencies and the number of corpus files in which they occur. See Table 4 for their normalized frequencies. The last two lines in Table 5 contain words and phrases which are translation counterparts of the most frequent ones in Norwegian or English, albeit not themselves at the top of the frequency lists. Only one of the items listed in Table 5 occurs in all the relevant corpus files, but the most frequent members of each category all occur in at least half of them.

Table 5. Adjuncts for lexical priming study (# = raw frequencies, NF = number of files out of 22 and 9, respectively)

	English			Norwegian			
		#	NF		Gloss	#	NF
Simplex	<i>yesterday</i>	52	15	<i>nå</i>	‘now’	46	9
	<i>today</i>	34	11	UKEDAG	‘WEEKDAY’	24	8
Phrase	<i>after NP</i>	43	14	<i>etter NP</i>	‘after NP’	22	7
	<i>last night</i>	32	12	<i>i går</i>	‘yesterday’	17	6
Clause	<i>when-clause</i>	75	19	<i>da-clause</i>	‘when-clause’	32	8
	<i>after-clause</i>	60	19	<i>når-clause</i>	‘when-clause’	22	8
Less frequent ‘twins’	<i>now</i>	33	18	<i>i dag</i>	‘today’	12	9
	<i>on</i>	15	11	<i>i går</i>	‘last night’	5	2
	WEEKDAY			<i>kveld</i>			

It was noted in Sections 5.2 and 5.4 that time adjuncts with equivalent meanings may be realized by different form classes. For example, two frequent and lexicalised Norwegian PPs, *i går* and *i dag*, correspond to the English single adverbs *yesterday* and *today*. Furthermore, equivalent meanings may be expressed by different phrase types, as shown in Section 5.4 for the NP *last night* corresponding to the PP *i går kveld*, which might be translated literally as ‘yesterday evening’, whereas *last night* might be rendered more congruently in Norwegian as *forrige kveld(en)* or *sist kveld*. These expressions are infrequent in the 1.5-billion-word *Norsk Aviskorpus* (‘Norwegian Newspaper Corpus’), with 32 and 9 hits respectively, and absent from the NoN-corpus. In contrast, *i går kveld* occurs more than 75,000 times in *Norsk Aviskorpus*. Conversely, *yesterday night* occurs four times in the *British National Corpus* (BNC), but not in the BE06, whereas the analogous *yesterday evening* occurs 90 times in the BNC (the majority in ‘Fiction and verse’) and once in BE06, shown as (28). The corpus evidence thus indicates that the synonyms *night* and *evening* have different collocational and colligational patterns regarding their co-occurrence with a

determiner or an adverb, both of which differ from the preferred Norwegian PP construction *i kveld* ('in evening').

- (28) It was still not under full control late *yesterday evening*. (BE06: A03)

The different ways of constructing weekday adjuncts, with and without an initial preposition, were described in Section 5.4. The observed pattern is that English uses a PP while Norwegian uses a nominal simplex for the equivalent meaning.⁸ In terms of lexical priming, the colligational tendencies of this pair thus differ between English and Norwegian. Interestingly, these patterns may be register-dependent: while all weekday adjuncts in the BE06 news reports were PPs, as in (29), there are examples of the NP use in other registers, see (30) from the spoken part of the BNC, although even in speech the PP form is the most frequent choice in a random sample of 100 occurrences of *Sunday*.

- (29) *On Saturday*, talent scouts will attend the graduate show of the fashion college Central Saint Martins... (BE06: A08)
- (30) and you could go *Sunday* and have a beer... (BNC-spoken)

In the NoN-corpus, weekday adjuncts are typically NPs, as in (31), except for one example of PP realization, shown in (32). However, in a Norwegian corpus of informal conversation (NoTa), 24 out of a total of 29 time position adjuncts involving the weekday *søndag* ('Sunday') were PPs, as exemplified in (33).⁹ It is thus possible that the collocational and colligational patterns of weekday adjuncts are register-dependent in both (British) English and Norwegian, but that the principles of priming work differently in the two languages.

- (31) Når jeg er på ferie, er jeg ikke utenriksminister, sa hun *lørdag* til fransk radio. (NoN: ADR)
[‘When I am on holiday, am I not foreign minister, said she *Saturday* to French radio.’]
- (32) Det første flyet som er planlagt til Norge, går *på tirsdag* ... (NoN: VG)
[‘The first flight that is planned for Norway, leaves *on Tuesday*...’]

⁸ As shown in Table 4 (ranks 20 and 16), references to dates are also PPs in English (e.g. *on 15 March*) and NPs in Norwegian (e.g. *15. mars*). However, the (non-)use of the preposition seems less variable with dates than with weekdays in both languages.

⁹ All occurrences of *søndag* ‘Sunday’ in NoTa were examined, but those that were not time position adjuncts in the form of a PP or a bare NP were ignored (e.g. *forrige søndag* ‘last Sunday’ and *fra fredag til søndag* ‘from Friday to Sunday’).

- (33) men jeg så en veldig fin film på tv *på søndag* (NoTa)
 ['but I saw a really good film on tv *on Sunday*']

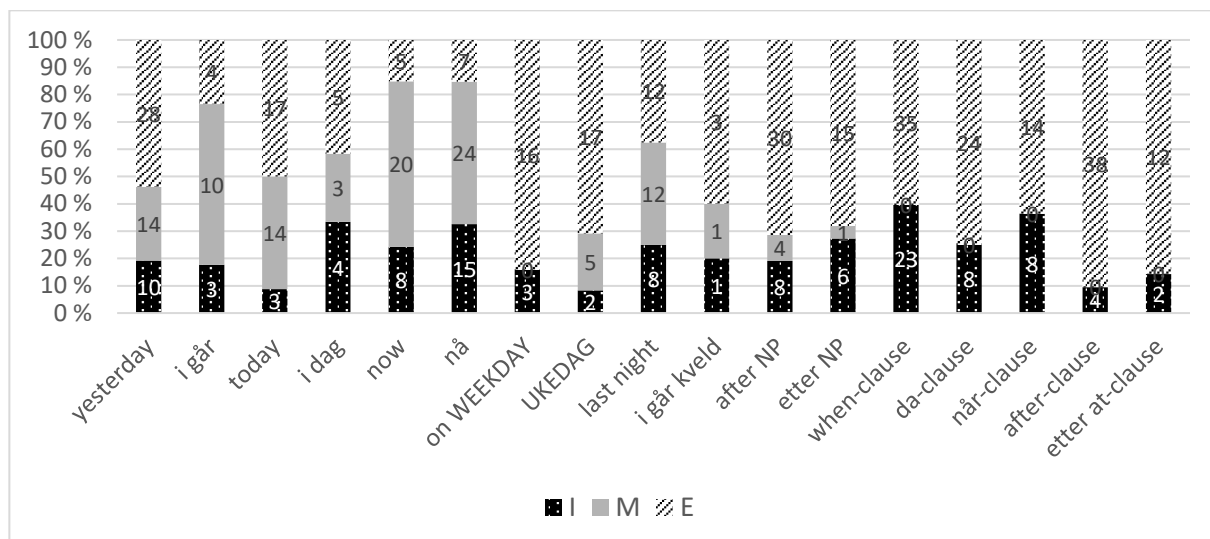


Figure 7. Positional patterns of pairs of lexicogrammatical items

Figure 7 shows the individual patterns of placement of the adjuncts listed in Table 5, i.e. the two most frequent simplexes, phrases and clauses in either language, juxtaposed with their closest translation counterpart in the other language. That is, it compares translationally related pairs of lexicogrammatical items with regard to positional priming. The patterns can be compared to those shown in Figure 5 for different realization types of adjuncts. The pairings in Figure 7 are obviously complicated by the fact that the members of several pairs belong to different form classes. But the intra-lingual comparison also shows idiosyncratic behaviour of members of the same form class, e.g. the adverbs *yesterday*, *today*, and *now*. The former two are relatively similar, but *now* has a very different pattern with medial position being the most frequent and end position the least frequent choice. As regards *yesterday* and *today*, the former seems more easily primed to initial position and slightly less easily to medial position than the latter. This may be connected to phonological factors as well as the expectedness and information value of time references in the news reports register.

Cross-linguistically we note that the cognates *now* and *nå* behave very similarly with regard to position. *Yesterday* and *i går* have rather different positional patterns, in that *yesterday* selects end position more than 50% of the time while the most common position of *i går* is medial position. The analogous pair *today* and *i dag* have slightly more similar positional patterns, but there are too few examples in the material to draw reliable conclusions. This is even more clearly the case for the phrase *i går kveld*, which was included as a counterpart of *last night*. However, with only five occurrences in two corpus files it can be concluded that *i går kveld* is not

primed to occur as an adjunct in this register to the same extent as the English *last night*. The English *yesterday* and *today* use medial position less than the overall tendency for English adverb phrases (cf. Figure 5), which may be related to their function as position adjuncts rather than frequency or relationship adjuncts (cf. Figure 6). Conversely, the positional pattern of *i går* (to a greater extent than that of *i dag*), is closer to that of Norwegian adverb phrases than to that of prepositional phrases in Figure 5. This is presumably associated with the high degree of lexicalization of these phrases, i.e. that they are conceptualized as single words.

In both languages the two most frequent phrases have quite distinct patterns of placement, as shown in Figure 7. While *after* NP behaves much like English prepositional phrases in general, the pattern of *last night* is more like adverbs (Figure 5), suggesting that this phrase too is conceptualized much as a single word. Like its English counterpart *after* NP, *etter* NP has a relatively similar pattern to that of Norwegian PPs in general, albeit with a lower proportion of medial position, which may be due to the small numbers involved. Cross-linguistically, Figure 7 shows that the patterns of *etter/after* NP are strikingly similar.

As regards the positional patterns of the clauses in Figure 7, it is notable that they occur only in initial and end position in both English and Norwegian in the present material. Norwegian *da*-clauses follow the overall pattern of Norwegian finite clauses (cf. Figure 5), i.e. initial position is selected in just over one in five cases. *Når*-clauses select initial position more often, almost 40%, like English *when*-clauses. This is in line with previous studies of *when*-clauses, e.g. Ford (1993) and Hasselgård (2017b). Both *after*-clauses and the much less frequent Norwegian counterpart with *etter at* select initial position much less frequently than *when/når*-clauses (c. 10% vs. c. 40%) and also less frequently than the average for finite clauses in both languages (Figure 5).

By way of summarizing this section, we have seen a collocational difference between the languages in that the words *next* and *last* collocate with a time noun more consistently in English to produce time expressions (often paralleled by PPs in Norwegian), while syntactically similar Norwegian NPs are less common. Furthermore, there is a colligational difference between the languages in that names of weekdays are primed to occur without a preposition in the news register in Norwegian but not in (British) English. Textually, this investigation has shown that frequent deictic (short) adjuncts seem primed to occur in non-final position more often than other adjuncts (*nå/now*, *i går*, *last night*), and furthermore, that the more lexicalized a phrase is, the more it deviates in positional preference compared to phrases of the same type (as was the case with e.g. *i går*, *i dag*, *last night*). It seems likely that the primings of especially *i går*, *i dag*, *last night*, *yesterday* and *today* are specific to the register of news reports, in which texts are typically read the day after they are written, or even on the same day, in the case of online publication.

6. Summary of findings and concluding remarks

The present chapter has investigated English and Norwegian time adjuncts in news reports. The overall impression is that there is great similarity between the two languages in this area. First, the overall frequencies of time adjuncts were unexpectedly similar, in view of previous studies of fictional language in the two languages. Furthermore, the distribution of syntactic realizations and semantic types of adjuncts also turned out to be rather similar, with no significant differences between the two datasets. However, it was noted that non-finite clauses are marginal as time adjuncts in Norwegian, but more widespread in English.

Cross-linguistic differences concern first and foremost the placement of time adjuncts. While there is some similarity in this area too, particularly the fact that end position is the most frequent one for most syntactic and semantic types of time adjuncts, it was shown that Norwegian makes more use of medial position. While medial position in English tends to allow only very short adverbials, preferably those realized by single adverbs (Hasselgård 2010: 290), Norwegian medial position more easily accommodates both NPs and PPs without any indication that they are parenthetical. Hence there are more position and duration adjuncts in medial position in Norwegian than in English, where this position is to a large extent reserved for frequency and relationship adjuncts and a small number of short time position adjuncts with atypical primings (Section 5.5).

The study of lexical realizations showed a high degree of similarity between the languages in that more than half of the 20 most frequent lexical items were equivalent between the two lists. However, to arrive at the frequency lists, some of the lexical items were abstracted into colligations such as *after* NP, *in* #####, and *when*-clause. Relatively few of the multi-word lexical items were highly recurrent in identical form in either English or Norwegian. There was little overlap between the recurrent multi-word lexical items, highlighting the fact that the same meanings can be realized by different form types in the two languages. In particular, some Norwegian PPs correspond to English adverbs and NPs, for example *i går* vs. *yesterday* and *i fjor* vs. *last year*. Some of the productive NP patterns in English are also available in Norwegian, such as ‘ *neste* and *forrige* (‘next’ and ‘last’) + time noun’. However, these patterns are less consistently used in Norwegian, particularly *forrige*, which felicitously collocates with the nouns *uke* (‘week’) and *måned* (‘month’), but not with nouns corresponding to *night* and *year*, which both frequently collocate with *last* in English. A larger material is needed to ascertain whether the differences uncovered are due mainly to differences in the realization of certain meanings, or if English and Norwegian newspapers choose to talk about time in different ways.

Probing further into the lexical primings of the most recurrent time adjuncts in both languages, it was found that Norwegian collocations with the preposition *i* ('in'), e.g. *i går*, *i morgen*) are not matched by English PPs, but by adverbs and NPs. Conversely, references to weekdays consistently involved a preposition in English but not in Norwegian. However, as both the PP and the NP patterns exist in both languages, other corpora containing other registers were consulted, and the findings suggest that weekday adjuncts may have different colligational primings for PP vs. NP realization across registers in both languages. The investigation also revealed individual patterns of colligational primings (including placement) across the most frequent lexical realizations. Deictic adjuncts with 'expected information', such as *last night*, *yesterday*, *today* and their Norwegian counterparts, seem primed to occur in non-final positions in this register, due to its special temporal context, with reading taking place very shortly after publication and texts typically reporting on very recent events.

Methodologically, the manual bottom-up approach used in this study is necessary for (close to) full recall of time adjuncts unless the investigation is limited to a set of predefined expressions. However, it severely limits the size of the dataset, as manual excerption is time-consuming. A potential follow-up might be to target specific expressions emerging from this study as particularly interesting because of either their frequency or their cross-linguistic differences and investigate these on the basis of more material.

The attention to lexical realizations and lexical priming has not been common in contrastive studies of adverbials (an exception being Dupont 2019), but I believe it can give new insights into language-specific and register-specific patterns of time adjuncts. In particular, it highlights the interrelationship between lexis and grammar by revealing specific patterns of individual lexical realizations against the backdrop of the general patterns of their grammatical class. In spite of the small size of the material and low degree of recurrence, the present study was able to point to some cross-linguistic similarities and differences in lexical priming. Again, larger corpora would be needed to get more reliable data on the lexical priming of time adjuncts. Another interesting avenue of further research would be to extend the comparison to more registers in both languages.

Johansson (2012: 64) argues that the contrastive analysis can throw "special features of the languages compared into relief, including preferred ways of expressing similar meanings". This study has taken a bottom-up approach to the expression of (similar) temporal meanings in English and Norwegian by means of adjunct adverbials. If we assume with Hoey (2005: 14) that corpus frequencies can give indications of lexical priming, the corpus approach applied here should be able to provide insights into what is natural, not only what is possible, in the use of time adjuncts (ibid.: 2) in both Norwegian and English. In a cross-linguistic perspective this might act as a peephole into the idiomaticity of both of the languages compared.

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Corpora used

BE06, *British English 06*,

<<http://www.helsinki.fi/varieng/CoRD/corpora/BE06/>>, Baker (2009)

BNC, *British National Corpus*, <<http://www.natcorp.ox.ac.uk/>>

NoN, Norwegian newspapers: See description in Section 3.

Norsk Aviskorpus (Norwegian Newspaper Corpus),

<<https://www.nb.no/sprakbanken/show?serial=oai:clarino.uib.no:avis-plain&lang=>>.

NoTa, *Norsk Talemålskorpus* [Norwegian Speech Corpus],

<<http://www.tekstlab.uio.no/nota/oslo/english.html>>

Appendix

English newspapers	code	words	Norwegian newspapers	code	Words
Aberdeen Evening Post	A01	2007	Adresseavisen	ADR	1932
Daily Mail	A02	1813	Aftenposten	AP	4873
Daily Mail	A03	2045	Dagsavisen	DAV	3600
Daily Star	A04	1996	Dagens Næringsliv	DN	1545
Evening Standard	A05	1928	Klassekampen	KLA	2968
The Guardian	A06	1937	Nationen	NAT	1685
The Independent	A07	1975	Stavanger Aftenblad	STA	2417
The Independent	A08	1900	VG	VG	2356
The Sun	A09	2012	Vårt Land	VL	1863
The Sun	A10	2078			
Yorkshire Evening Post	A11	2031			
Western Morning News (Plymouth)	A12	1958			
Yorkshire Evening Post	A13	1972			
Times Higher Education Supplement	A14	1944			
South Wales Echo	A15	2031			
The Sentinel (Stoke)	A16	1992			
The Scotsman	A17	1939			
Nottingham Evening Post	A18	1946			
The Northern Echo	A19	1950			
Birmingham Evening Mail	A20	2080			
Daily Telegraph	A21	2105			
Daily Telegraph	A22	2003			
		43642			23239

Table A. Details of the corpus composition