

Of-constructions in the Interlanguage of Norwegian Learners of English: A Pseudo-longitudinal Study

Hilde Hasselgård (University of Oslo)

Abstract

The most frequent preposition in English is *of*. Despite its frequency it can be difficult for learners because many of its central uses are abstract. This paper examines the usage of *of* among young Norwegian learners of English at different study levels. The emphasis is on the forms and functions of the phrases containing *of*, with special attention to noun phrases (NPs). The material comes from a corpus of pupil writing (TRAWL), with random samples from years 8, 10, and 11 (ages c. 13–16). This is compared to samples from learners at tertiary level (ICLE-NO) and young English L1 users (Growth-in-Grammar corpus). The overall frequency of *of* increases with study level, and more importantly, the samples indicate qualitative changes in its use. Generally, NP postmodification is the dominant use, and it increases after year 8. Multi-word units (e.g., *a lot of*, *of course*) take up a smaller share of the samples after year 10. Within the N1 *of* N2 pattern, the proportions of quantifying and part-whole patterns decrease, while nominalizations, possession, and support-noun constructions increase. NP length remains stable, but the co-occurrence of pre- and postmodifiers rises with proficiency. The ICLE-NO sample generally has a greater share of advanced uses than TRAWL 11 except for a lower proportion of nominalizations. The L1 writers align with TRAWL 10 and/or 11 in most respects. The material thus suggests a development towards less reliance on fixed-phrase uses and a wider range of lexicogrammatical environments for *of*.

Keywords: *of*-constructions; L2-development; complex noun phrases; nominalization; Norwegian learners of English

Hasselgård, Hilde. 2026. '*Of*-constructions in the Interlanguage of Norwegian Learners of English: A Pseudo-longitudinal Study.' *Nordic Journal of English Studies* 25(2): 110–137. <https://doi.org/10.35360/njes.v25i2.63497>. Copyright (c) 2026 Hilde Hasselgård. This work is licensed under a [Creative Commons Attribution 4.0 International License](#).

1. Introduction

Of is the most frequent preposition in English.¹ Yet it is not a prototypical preposition because of its tendency to form prepositional phrases with noun-modifying rather than adverbial function, which makes Sinclair suggest that it may be ‘distracting to regard *of* as a preposition at all’ (1991: 83). In Groom’s (2007) study of three 100-line samples of the preposition *of*, about 90% of the instances represented the sequence **n of n** in a corpus of academic writing (2007: 82). Furthermore, Biber et al. (1999: 635) state that 60–65% of noun-modifying prepositional phrases (PPs) are introduced by *of*.

This study focuses on how Norwegian intermediate learners of English use the preposition *of*. It is not limited to the sequence **n of n**, but includes *of*-phrases that have an independent clause-level function, *of* in adjective and adverb complementation, and *of* as part of multi-word verbs or complex prepositions. To an even greater extent than other prepositions, *of* may be hard for learners of English because its uses are mainly abstract. Norwegian learners cannot rely on the cognate Norwegian preposition *av* (OED, *of*), since these prepositions are not fully equivalent (Hasselgård 2016). As Hunston (2008: 272) argues, prepositions have a central role in grammar patterns and can be crucial for textual meaning because of their non-random association with co-occurring words.

To investigate potential development in how the learners use *of*, the study relies on material representing three stages of secondary education, i.e., the first and last year of lower secondary school (years 8 and 10) and the first year of upper secondary school (year 11). This material comes from the English part of the longitudinal Tracking Written Learner Language (TRAWL) corpus (Dirdal et al. 2022). The TRAWL data are compared to similar material from learners in their first year of tertiary education, culled from the International Corpus of Learner English (ICLE-NO), and to English L1 (EL1) users in year nine of the UK school system, as represented in the Growth-in-Grammar (GiG) corpus; see section 3.1. Concordances of *of* were extracted from each of the corpora to answer the following research questions:

¹ This is indicated in Groom (2007: 73 ff.) and corroborated by a frequency list of words tagged as prepositions in British English 2021: see <https://cqpweb.lancs.ac.uk/be2021/>.

- What are the lexicogrammatical forms and functions of the phrases containing *of* across the writer groups?
- How is *of* used in noun phrases across levels and writer groups, especially in terms of meaning relations and noun phrase complexity?
- To what extent is *of* used as part of relatively fixed multiword units across the writer groups?

The lexicogrammatical contexts where *of* corresponds to Norwegian *av* are expected to be unproblematic for the learners (through positive transfer). Other *of*-expressions may be more challenging, with potential for underrepresentation or error, for example those where a similar Norwegian construction has a different distribution, as in the case of prepositional genitives (Hasselgård 2024). Moreover, uses that reflect ‘open choice’, e.g., *clothes of the highest quality* (TRAWL11) and *the shock of never leaving* (GiG9), are expected to be found mostly among L1 and advanced L2 users; similarly for nominalizations (e.g., *the establishment of Jamestown*; TRAWL10), which are generally considered an advanced feature (Biber and Gray 2016; Halliday 1993). Conversely, the youngest learners are expected to favour formulaic phrases with *of* that are typically learnt as chunks, e.g., *of course*, *a lot of*, *kind of*, *take care of*.

2. Previous studies

A study of how *of* is used is to a great extent a study of complex noun phrases (NPs). Other uses, though less frequently described, include *of* in adjective complementation (e.g., *typical of*) and as part of complex prepositions (e.g., *out of*, *because of*), multi-word verbs (e.g., *consist of*), and other fixed expressions, such as *of course* (Groom 2007: 83). Complex NPs are associated with both syntactic complexity and grammatical sophistication (Bulté and Housen 2012: 27). NP complexity has been found to develop throughout primary, secondary and tertiary education in both L1 and L2 (e.g., Durrant and Brenchley 2023; Parkinson and Musgrave 2014; Staples et al. 2016), in the sense that complex NPs become more frequent and structurally varied. As Ravid and Berman observe, ‘in language acquisition, NPs manifest a gradual increase in length and complexity over time’ (2010: 4). In their L1 English and L1 Hebrew data, the greatest leap in NP length and sophistication was found

from about age 16 (2010: 17). There is a large body of research on NP complexity; see the literature reviews in, e.g., Biber and Gray (2016) and Durrant and Brenchley (2023). Rather than attempting to summarize the field, the present overview focuses on work that is related to NP usage among young learners of English and to English-Norwegian contrasts so as to lay a foundation for the following analysis of *of*-phrases in the interlanguage of Norwegian learners of English.

Hasselgård (2016) studies the English colligation '*the N1 of the N2*' and its Norwegian correspondences in the English-Norwegian Parallel Corpus. Despite the structural similarity between the languages in the composition of NPs, the majority of Norwegian translations and sources of '*N1 of the N2*' constructions were non-congruent, i.e., they did not have the structure '*definite N1 + prep + N2*'. Potential reasons include differences in the use of prepositional genitives, a more productive system of noun compounding in Norwegian and an apparent reluctance to use complex NPs to the same extent as English does (Hasselgård 2016: 77). These results inspired a follow-up study of the same English colligation in academic writing by Norwegian tertiary-level learners compared to L1 English novice writers in the same academic field, literary studies (Hasselgård 2019). The hypothesis was that learners would use fewer postmodifying *of*-phrases than English L1 users due to the English-Norwegian contrasts as well as the grammatical complexity involved in their use. Unexpectedly, the colligation was about equally frequent in English L2 as in English L1, but there were qualitative differences between the two writer groups. Particularly nominalization + *of* (e.g., *the restoration of the monarchy*) was underrepresented in the L2 writing, as was the meaning '*N1 is a feature of N2*', as in *the structure of the poem*. By contrast, the L2 users had more part-whole constructions, as in *the end of the story*.

Turning to Norwegian learners at an intermediate proficiency level, Rørvik (2022) examines the development of nine lower secondary school pupils as regards their use of English NPs. She notes that the overall frequency of simple NPs decreases from year 8 to year 10 with a corresponding increase in complex NPs (2022: 311). However, the use of postmodifying *of*-phrases varies across individuals, with five of the nine pupils increasing their use from year 8 to year 10 and four using the same number or fewer in year 10 compared to year 8 (Rørvik 2022: 316). A fairly similar pattern occurs in the use of other prepositional phrases as

postmodifiers (Rørvik 2022: 316). However, the observed increase in complex NPs is not accompanied by a rise in sophistication, as Biber et al.'s (2011) developmental stages of NP complexity from conversational to academic style would predict; rather the pupils use more of the lower-stage modifiers (Rørvik 2022: 323).

Studies of other L1 groups of learners make similar observations. Kreyer and Schaub (2018) study NP modification in the writing of (German) intermediate-level learners of English in school years 10 to 12. The length and complexity of attested NPs are characterized by much individual variation and do not show any clear developmental pattern. The use of *of*-phrases as postmodifiers, however, rises steadily across the levels, as does modification by PPs other than *of*-phrases (2018: 98–99). Díez-Bedmar and Pérez-Paredes (2020) study the use of NPs among Spanish learners of English in school years 7, 8, 11 and 12. Like Rørvik (2022), they observe increased variety in the use of complex NPs across levels. NPs with multiple modifiers become more frequent over time, especially those with both pre- and postmodifiers. The older learners not only use more complex NP tokens but also more *types* of modification (Díez-Bedmar and Pérez-Paredes 2020: 22). The Spanish learners develop more in the use of premodifiers than postmodifiers, especially in year 12 (2020: 23), possibly due to typological differences between Spanish and English in the placement of adjectival noun modifiers. The frequency and length of complex NPs develop in similar fashion in L1 users of English, as shown by Durrant and Brenchley (2023: 251–252). Without discussing *of*-phrases separately, they observe that ‘the frequency and length of post-modification by preposition phrases [...] increase significantly across year groups’ (2023: 251).²

Being a feature of formal language, NP complexity continues to develop at tertiary levels in both L1 and L2 writing (Parkinson and Musgrave 2014; Staples et al. 2016; Staples et al. 2023). NPs with a nominalized head have been shown to be particularly challenging, both structurally and semantically, involving abstraction (Ravid and Berman 2010: 10) and grammatical metaphor, by which nouns rather than verbs encode actions and events (Halliday 1993: 79). Staples et al. (2023: 57,

² The study includes texts from years 2, 6, 9 and 11 of the UK school system (Durrant and Brenchley 2023: 245).

59) show that unlike *of*-phrases, nominalizations increase across university levels but remain lower for L2 than for L1 users of English.

As noted above, *of* sometimes occurs in (semi-)fixed expressions, as part of, e.g., noun phrases (*a lot of*, *a kind of*, etc.), adjective phrases (*afraid of* etc.) and multi-word verbs (*think of*, *get rid of*, etc.). Evang (2022) investigates phraseological development in Norwegian secondary school students' writing in English L2. She finds that lower-level learners rely more on prefabricated units than those at the highest level: 'From 8th grade the pattern shows a decline in the proportion of high MI scores, as well as high *t*-scores' (2022: 373). This agrees with Garner's (2016) finding that p-frames (multiword sequences with one variable slot) become less predictable and more varied at higher proficiency levels. For the present study, this means that *of* is expected to occur proportionally more often in relatively fixed expressions among the younger learners than those at higher levels.

3. Material and method

3.1 Corpus material

The main corpus for the study is TRAWL, Tracking Written Learner Language, which comprises texts collected in Norwegian schools from 2015 (Dirdal et al. 2022: 118). The texts are authentic in representing texts that pupils write as part of their regular English classes, including tests, and they are of different lengths and registers, spanning, e.g., narrative and argumentative texts (Dirdal et al. 2022: 121; Hasund 2022). The metadata include information on the pupils' L1 background, age and school year. Hence it was possible to select texts by Norwegian L1 users learning English as an additional language. School years 8, 10 and 11 (ages c. 13, 15, and 16) were selected, which represent the first and last year of lower secondary school and the first year of upper secondary school. Many learners submitted texts throughout lower secondary schools (years 8–10), but the year 11 texts largely come from a different population (Dirdal et al. 2022: 127). Since the present study relies on random samples (see section 3.2), no attempt will be made to track individual learners, and the study can thus be described as pseudo-longitudinal.

The material from TRAWL is compared to two reference corpora. The Norwegian component of the International Corpus of Learner English (ICLE-NO) represents Norwegian learners of English at tertiary level and thus presumably a higher proficiency level than the TRAWL writers.

ICLE-NO was compiled around year 2000 and comprises argumentative texts written by first-year university students of English with Norwegian L1 (Granger et al. 2020). For comparison with L1 English writing, the Growth in Grammar (GiG) corpus is used (Durrant and Brenchley 2018). The selected texts come from year 9 (age c. 13), which matches TRAWL8 for age. Only English L1 texts from the subject English were selected. To make the material as comparable as possible to the TRAWL material, both literary and non-literary texts were included (categories 3, 4 and 7; see Durrant and Brenchley 2018). The composition and size of the corpora are shown in Table 1.

Table 1: The corpora and their sizes

Corpus	Size (words)	texts
TRAWL8	187,280	280
TRAWL10	226,894	328
TRAWL11	72,862	91
ICLE-NO	212,324	316
GiG9	85,996	260

3.2 Retrieving and organizing the data

Searches in TRAWL were made in the Glossa interface (Nøklestad et al. 2017). Only texts written by learners with Norwegian as their L1 were included. No restrictions were set as to task type, resulting in a mixed-register material. The filter ‘Version’ was set to V0, which represents texts that exist in only one version in the corpus.³ Material from the three school years was extracted in three separate searches. Because of the very high frequency of *of* (see Table 2), the output for each year was reduced to a random sample of 200 concordance lines. Samples from ICLE-NO and GiG9 were produced in similar fashion, but using AntConc (Anthony 2020) instead of an online search interface.

The sample size can be justified from Groom’s (2007) analysis of three different 100-line concordance samples from the same population of L1 academic writers. Observing the same types of semantic sequences

³ Some texts exist in draft and revised versions (V1 and V2), i.e., with a second submission following teacher feedback. These texts have not been used here.

with *of* in each sample, and in similar proportions, he concluded that ‘100 lines of data are a sufficient basis for making statements of proportion and/or frequency’ (2007: 101). The sample size in this study is larger because the L2 material represents different proficiency levels and registers compared to Groom’s material. Thus, more variation can be expected.

Each sample was reviewed manually to remove irrelevant hits. These included some names (e.g., *Statue of Liberty*, *United States of America*), quotes (e.g., *pursuit of happiness*), and quoted titles (e.g., *The secret life of Walter Mitty*). The reason for removal was that such phrases do not show the learners’ own use of the preposition. Also excluded were some instances where *of* was clearly a misspelling of *off*. All the excluded lines were replaced by corresponding lines from a different random sample from the same subcorpus, thus keeping the sample size at 200.

Table 2 shows the total frequencies of *of* in each subcorpus. The normalized frequencies in the third column reveal that *of* increases in frequency with study level among learners,⁴ while the frequency in GiG9 lies between those of TRAWL10 and TRAWL11. The last column shows what percentage of the total number of *of* was included in the random samples of 200.

Table 2: Total frequencies of *of* in the subcorpora, and proportion of the samples to the total

Corpus	<i>of</i> (raw N)	Per 1000 words	Random % of total
TRAWL8	1987	10.6	10.07
TRAWL10	3420	15.1	5.85
TRAWL11	1670	22.9	11.98
ICLE-NO	5451	25.7	3.67
GiG9	1581	18.4	12.65

⁴ Pairwise comparisons of years 8 and 10, 10 and 11, and 11 and ICLE-NO all produced highly significant log likelihood scores with $p < 0.0001$. The highest LL (hence the greatest difference) was between years 10 and 11 (186.83) and the lowest between TRAWL11 and ICLE-NO (16.78).

3.3 Classifying the material

The samples were manually annotated for a set of lexicogrammatical features, such as the type of phrase *of* belongs to, the syntactic function of the *of*-phrase at phrase or clause level, and the fixedness of the *of*-construction, i.e., whether the expression can be regarded as a prefabricated unit (e.g., *in front of*; see section 4.5). The following phrase memberships / syntactic functions were identified:

- Complement in adjective or adverb phrase (e.g., *full of love*, *first of all*)
- Complex preposition (e.g., *instead of*, *in front of*)
- Multi-word verb (e.g., *consist of*, *take care of*)
- Modifier in noun phrase (e.g., *a source of money*, *lack of freedom*, *the director of the film*). This category includes pronoun-headed NPs and some quantifying expressions, e.g., *a lot of*.
- Prepositional phrase without modifier function (e.g., *of course*, *[be] of importance*)

Of-phrases embedded in an NP were also annotated for the total length of the NP and the meaning relation between the head of the NP and the NP in the *of*-phrase, referred to below as the N1 and the N2. The meaning categories are based on previous studies, especially Sinclair (1991: 85 ff.), Groom (2007: 96) and Hasselgård (2019):

- Possession (N2 owns N1): *the official language of Australia* (TRAWL11)
- Part of whole (N1 is a part of N2): *the bottom of my stomach* (TRAWL8)
- Share (N1 is a subset of N2): *most of these countries*; *one of the dogs* (TRAWL10)
- Measure (N1 quantifies N2): *hundreds of years*; *a lot of time* (TRAWL8)
- Feature (N2 is a feature/attribute of N1): *handcuffs of gold* (TRAWL8); *a picture of the protagonist* (TRAWL11)
- Support (N1 is a support to N2): *examples of bad communication* (TRAWL11); *the city of Verona* (GiG9)

- Title (N1 is a person with a function): *president of the USA* (TRAWL11)
- Nominalization (N1 is a nominalized verb or adjective):⁵ *the use of social media; knowledge of the language* (TRAWL10)
- Kinship (N1 has a personal relation to N2): *the daughter of Henry VI* (TRAWL11).
- Double-headed (N1 and N2 are equally important): *chance of recovering* (ICLE)
- Temporal (N1 or N2 has temporal meaning): *years of loneliness* (TRAWL10)
- Hedge (N1 + *of* make the meaning of the following phrase approximate; there is typically no N2.): *My legs kind of hurt* (TRAWL8)
- ‘Other’ includes N1s indicating cause (e.g., *the foundation of many actions*), container (e.g., *a glass of water*), and person (e.g., *a fan of fast food*).

3.4 Contrastive interlanguage analysis

The study applies the framework of Contrastive Interlanguage Analysis (CIA: see Granger 2015, 2024). In this framework, varieties of learner language are typically compared to each other and/or to varieties of native language (Granger 2015). The reference corpora need not be L1-based; they may for example represent proficient non-native language users. The CIA model emphasises quantitative and qualitative comparison rather than error detection. In this study, the three TRAWL subcorpora are compared to each other and to two reference varieties. These represent advanced L2 and adolescent L1 writing and clearly serve as yardsticks for the TRAWL levels rather than a target norm for the learners.

4. Results and discussion

4.1 Distribution of lexicogrammatical constructions with *of*

The lexicogrammatical functions of the preposition *of* are unevenly distributed, as shown in Figure 1. As expected, the noun-modifying function is most frequent, although it never reaches the 90%-level found

⁵ This category is based on form and may overlap with the meaning categories. However, no nominalizations were classified in other categories.

in Groom's study of academic English (2007: 82). Other functions are rather rare by comparison, with complex prepositions accounting for the second largest proportion but decreasing slightly across EL2 levels. Multi-word verbs and adjective/adverb complementation are relatively stable across levels. The pattern of the EL1 users in GiG9 seems closest to those of TRAWL 10 and 11. Overall, there are rather small differences across levels and corpora, but the proportion of NP modification in TRAWL increases slightly after year 8.

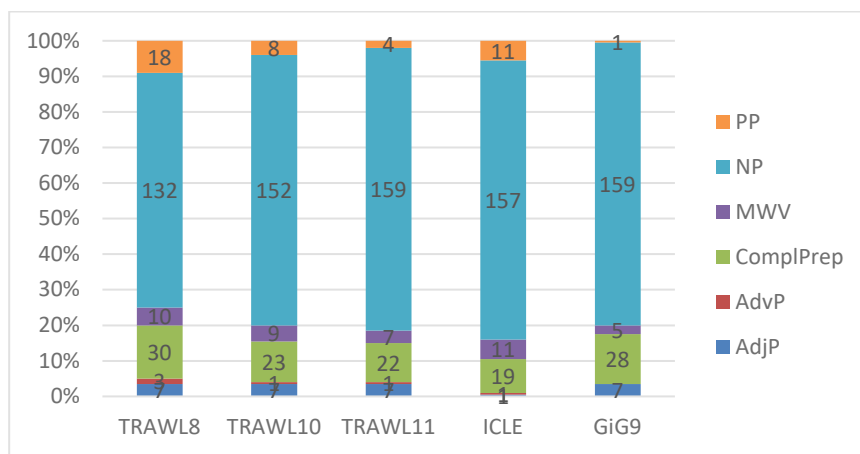


Figure 1: Lexicogrammatical constructions with *of*. Percentages and raw frequencies in the 200-line samples

The following sections will discuss some of the lexicogrammatical constructions in more detail, i.e., adverb/adjective complementation (4.2), PPs with clause-level functions (4.3), and noun modification (4.4). Complex prepositions and multiword verbs are discussed together with other expressions considered to be multi-word units in section 4.5.

4.2 *Of in adjective and adverb phrases*

Of-phrases complementing adjectives and adverbs are infrequent in the material: see Figure 1. In the case of adjective phrases, the preposition is usually idiomatic to the adjective, e.g., *afraid of*, *full of*, *tired of*, and *capable of*. The preposition can also be part of a superlative construction,

as in (1). The material contains only one adverb phrase with *of*, namely *first of all*, which occurs in all the subcorpora except GiG9; see (2).

- (1) She is the *prettiest* Mouse *of them all*. (TRAWL8)
- (2) *First of all*, she is really funny. (TRAWL8)

All the adjective+*of* combinations used in TRAWL are grammatically correct. In most of them, the corresponding Norwegian expression contains the cognate preposition *av*, e.g., *full av*, *trett av* ('full of', 'tired of'), but the closest equivalents of *fond of* and *afraid of* have other prepositions (*glad i* 'in' and *redd for*, respectively). However, these combinations probably represent such basic vocabulary that the collocations are learnt early.

4.3 Of-phrases with clause-level syntactic functions

While prepositions in general are 'principally involved in combining with following nouns to produce prepositional phrases which function as adjuncts in clauses' (Sinclair 1991: 82), this is not the typical role of the preposition *of*. However, *of* sometimes heads a PP with adverbial or predicative function, as exemplified in (3) and (4), respectively. Predicative uses include *BE of interest*, *BE of value*, *BE of importance*, *BE of the opinion that*. These are more frequent in ICLE-NO than in TRAWL and GiG9.

- (3) We can be sick and die *of fast food*. (TRAWL8)
- (4) The photo on the next page is *of a temple*... (TRAWL10)

Some of the adjunct uses are associated with error, especially caused by the choice of the wrong preposition, as in (5)–(7), where a correction is suggested in square brackets. In (5) and (6) the corresponding Norwegian expression would have used the cognate *av*. However, in (7) a possible reason for error is overgeneralization of the quantifying phrase *a bit of*, as Norwegian might have used the preposition *om* ('about') here.

- (5) ...books that are written *of [by]* *S. Collins*. (TRAWL8)
- (6) make a little boat *of [from]* *something he found*... (TRAWL8)
- (7) Now I've said a little bit *of [about]* *why English has become the global language*... (TRAWL10)

Independent *of*-phrases involve some fixed expressions, especially *of course*, which, although it has lexicalized as an adverb (OED, *of course*), still retains the form of a prepositional phrase. In the 200-word samples, *of course* occurs 11 times in TRAWL8, three times in TRAWL10, twice in TRAWL11, three times in ICLE-NO, and once in GiG9. The apparent tendency in TRAWL is in line with the observed pattern for multi-word expressions in section 4.5; they take up a larger share at the lower levels.

4.4 *Of in noun phrases*

Since NPs are the most frequent habitat of *of* (Figure 1 and Groom 2007), they will be discussed under several subheadings. Section 4.4.1 presents the typical meaning relations between the nouns involved in an N1 *of* N2 pattern. Section 4.4.2 discusses cases where the N1 is a nominalization, while the next two sections look into the length and complexity of NPs with *of* and the co-occurrence of premodifiers and *of*-modifiers.

4.4.1 *Functions and meanings of the N1 of N2 pattern*

The meanings of the N1 of N2 pattern are unevenly distributed, as shown in Figure 2. In TRAWL8, the three most common meanings—part, share, and measure—account for 63% of the *of*-sequences. The combined proportion of these three meanings decreases with level to 58% in TRAWL10, 44% in TRAWL11 and 39% in ICLE-NO. By comparison, GiG9 has 42%, which places them close to both TRAWL11 and ICLE-NO, but with a larger share of part-whole sequences.

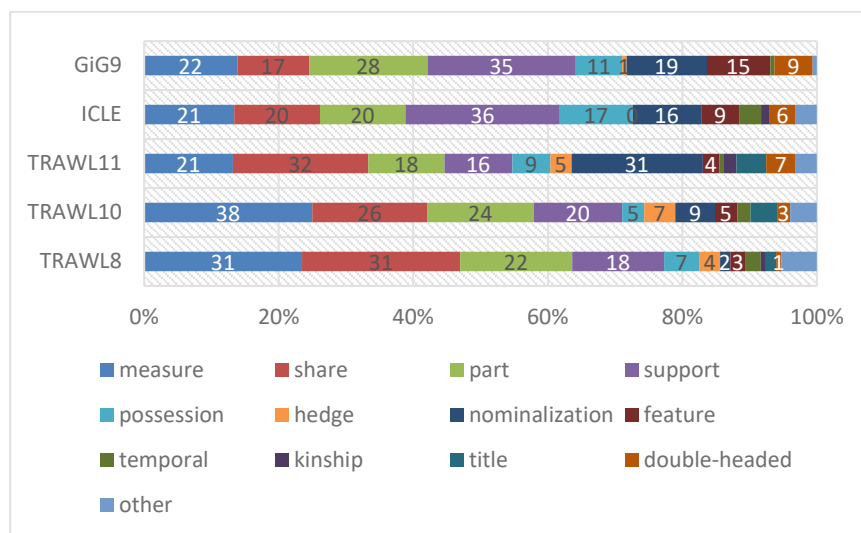


Figure 2: Semantic analysis of N1 of N2 sequences

Meanings that increase with level are nominalization, support, and possession, of which the last two distinguish mainly between TRAWL and ICLE-NO. These will be discussed briefly here, while nominalization is the subject of the next section. Examples of support nouns are given in (8)–(10). A support noun occurs as N1 and ‘is seen as offering some kind of support to N2, rather than just specifying some relevant aspect of N2’ (Sinclair 1991: 89).

- (8) There are two *species of* crocodiles in Australia. (TRAWL8)
 (9) ...the *process of* designing the US... (TRAWL10)
 (10) This shows a *level of* uncertainty and instability...
 (TRAWL11)

Hasselgård (2019) found that Norwegian EL2 writers used fewer support nouns than EL1 writers in their academic texts, linking this to the fact that English support nouns often get non-congruent or zero translations into Norwegian (Hasselgård 2016). For example, a Norwegian version of (10) might, by analogy to similar examples in the English-Norwegian Parallel Corpus, either omit a counterpart of *level of* or use a determiner or a premodifer instead (e.g., *en viss usikkerhet* ‘a certain uncertainty’). Thus,

it is plausible that the use of support nouns can be considered an advanced feature that does not come automatically to Norwegian learners of English.

Possession is often regarded as the prototypical meaning of ‘N1 of N2’ sequences (e.g., Keizer 2007: 63), so its low frequency in the material may be surprising. One possible explanation is that *of*-genitives are typically associated with non-personal possessors, thus likely requiring some level of abstraction. In contrast, Norwegian prepositional genitives typically combine with human possessors and cannot be transferred directly into English (Hasselgård 2024). Examples include those in (11)–(13), showing both human and non-human possessors.

- (11) Manhattan is *the home of skyscrapers*. (TRAWL8)
- (12) English is also *the official language of the UN*... (TRAWL11)
- (13) This is not in *the best interest of the child*, either, I will say.
(ICLE-NO)

The increase in *of*-genitives may also be linked to register, since the share of literary texts in TRAWL decreases with study level, with a concomitant increase in expository and argumentative texts (Dirdal et al. 2022: 122). In other words, *of*-genitives are more likely to occur in texts that are less personal and more abstract (Biber et al. 1999: 302).

4.4.2 Nominalizations with *of*-modifiers

There is wide consensus that nominalization is a linguistically and conceptually advanced feature linked to academic style (Biber and Gray 2016; Halliday 1993) and that L1 and L2 users alike increase their use of nominalization throughout secondary and tertiary education (Parkinson and Musgrave 2014; Staples et al. 2016). Moreover, Hasselgård (2019) found that nominalizations with *of*-modifiers are more widespread in English L1 than in Norwegian-based L2 novice academic writing.

Figures 2 and 3 show a clear rise in the proportions of nominalizations across TRAWL, and then a surprising drop to ICLE-NO. GiG9 has a similar proportion of nominalizations to ICLE-NO. There is little lexical recurrence among the nominalizations, and none at all in TRAWL8 and GiG9. In TRAWL10, *knowledge* and *waste (of time)* occur twice each, and in TRAWL11, *lack* occurs three times and *definition*, *development* and *thought* twice. In ICLE-NO, *possibility*, *importance*, *lack* and *use* occur twice each. It is not possible to gauge from the random samples why

TRAWL11 should have so many nominalizations, since there is also much lexical variation. While some of the nominalizations in year 11 seem to reflect wordings from secondary texts,⁶ there is no reason why, for example, year 10 pupils should not make similar use of such texts. The TRAWL11 examples include both more and less successful attempts, as shown in (14) and (15), respectively:

- (14) From ordering *the execution of her sister*, to denying any form of marriage, Elizabeth I made decisions that are still impacting us to this day. (TRAWL11)
- (15) He uses a lot of literary effects such as very long and complex sentences, huge contrasts to make his point, and *a lot describing of the characters*. (TRAWL11)

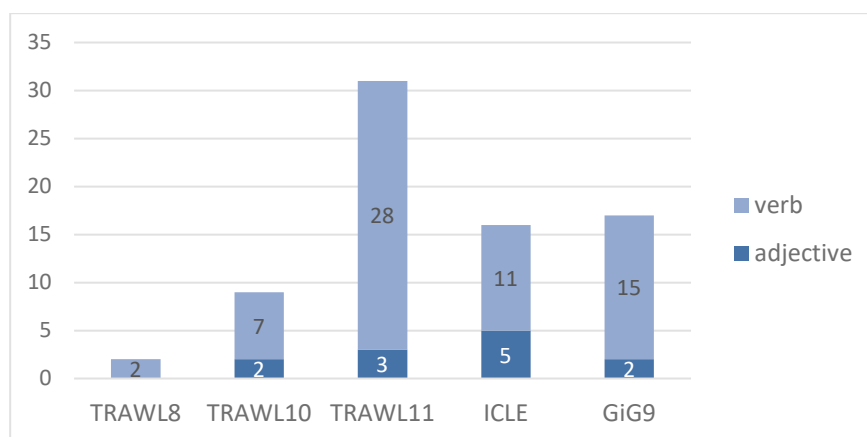


Figure 3: Nominalizations based on verbs and adjectives (raw numbers)

Across the subcorpora, more nominalizations are based on verbs than on adjectives, as shown in Figure 3 and exemplified in (16)–(18). Examples (16) and (17) are typical of the verb-based nominalizations in that the *of*-phrase refers to the object of the corresponding verb, i.e., ‘X uses social media’, ‘I understand the poem’.

- (16) *the use of social media* (TRAWL10)

⁶ For some writing tasks, pupils are given secondary texts as support material (Hasund 2022: 253).

(17) *my understanding of the poem* (TRAWL11)

(18) *the possibility of learning a vocation* (ICLE-NO)

No subject-oriented *of*-phrases occur in TRAWL8 and TRAWL10, but TRAWL11 and ICLE-NO have two each, e.g., *the death of Anne Boleyn* (TRAWL11). In GiG9, by contrast, four out of 15 verb-based nominalizations have subject-oriented *of*-phrases, suggesting a potential difference in nominalization usage between L1/L2 writers which would need more material to be properly explored.

4.4.3 Length of noun phrases with *of*

To gain an impression of NP complexity, the length of each NP with *of*-modification was measured in terms of number of words. NPs classified as hedges, i.e., *kind of* / *sort of* (section 4.4.1) were excluded from the counts as they typically lack a complement of the preposition; see (29) below. The results are shown in Figure 4 (raw numbers per subcorpus). The numbers above the corpus names refer to the total number of NPs included in the counts.

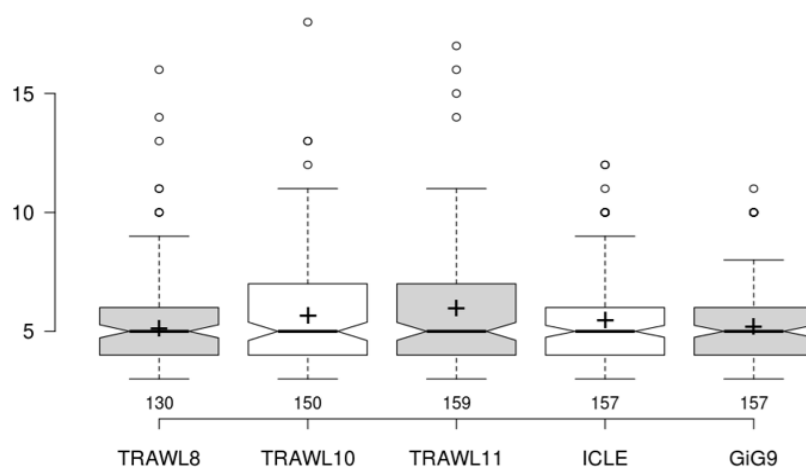


Figure 4: The length of noun phrases with *of*-modifiers (except hedges; raw numbers)⁷

⁷ The boxplot was produced with the tool available at <http://shiny.chemgrid.org/boxplotr/>.

Figure 4 shows that the length of NPs with *of*-modifiers is remarkably stable across the corpora. Only TRAWL10 and TRAWL11 have a slightly higher mean length of the NPs, as indicated by the taller boxes and detailed in Table 3. The median length of five words indicates that most NPs are not very complex, most typically containing a determiner and a three-word postmodifier in addition to the head, as, e.g., *the time of her death*, *the thought of being late* (TRAWL11).

Table 3: Details of noun phrase length across the corpora

	TRAWL8	TRAWL10	TRAWL11	ICLE	GiG9
Upper whisker	9	11	11	9	8
Lower whisker	3	3	3	3	3
Median	5	5	5	5	5
Mean	5.15	5.67	5.99	5.46	5.19

The shortest possible length of an NP with an *of*-modifier is three words, e.g., *one of them*, while the longest NP in the material consists of 18 words; see example (19). However, this phrase probably stems from an external source, as the same wording also occurs in a different corpus text (not included in the sample).

- (19) The film is *an explosive drama of all the changes taking place in the American society after the 2 world war*. (TRAWL10)

Examples (20)–(24) show the longest NPs in the other subcorpora. As the examples illustrate, long NPs with *of* often involve multiple and/or embedded modifiers. For example, in (20), the *of*-phrase contains a relative clause with an embedded *that*-clause, while (22) has a split modifier where the superlative *highest* is complemented by the second *of*-phrase in the sentence.

- (20) There are also *some of the civilian people who just can see on me that I don't live here*. (TRAWL8: 16 words)
 (21) This was *one of many reasons for why the poor people always were so tired, dirty and sick*. (TRAWL11: 16 words)

- (22) Europe has *the highest standard of public health of any continent in the world...* (ICLE-NO: 12 words)
 (23) ...and they would have *a better understanding of what is bad and what is good...* (GiG9: 11 words)

4.4.4 Co-occurrence with premodifiers

Another perspective on NP complexity is gained by considering the number of *of*-modified NPs that also include a premodifier, as shown in Table 4. The cooccurrence of pre- and postmodifiers has been shown earlier to increase with proficiency level (Rørvik 2022: 323; Díez-Bedmar and Pérez-Paredes 2020), and this also seems to apply to the present material.⁸

Table 4: Premodifiers in NPs with postmodifying *of*-phrases

	Premodified NP	of total	%
TRAWL8	15	128	11.72
TRAWL10	21	145	14.48
TRAWL11	27	151	17.88
ICLE	37	157	23.57
GiG9	19	157	12.10

Table 4 suggests that two kinds of development may be at play in multiple NP modification: Among the learners, the percentage of NPs with both pre- and postmodifier increases with age/study level. However, the L1 and L2 speakers of the same age align with each other. Examples from TRAWL are given in (24)–(26); ICLE-NO and GiG9 are represented in (22)–(23) above.

- (24) I'm not *a really big fan of fast food...* (TRAWL8)
 (25) Whereas the Americans talk pretty straight forward the British accent has *a different tone of voice* and is a little more 'gentle' and 'colorful'. (TRAWL10)

⁸ The difference between TRAWL8 and ICLE-NO is significant at the $p < 0.05$ level, but the differences from one level to the next are not (log likelihood).

(26) *Two very clear examples of bad communication...*
(TRAWL11)

The premodifiers used by the younger writers are overwhelmingly realized by adjectives, and only occasionally by nouns: *home town of...* (GiG9), *the communist government of North Vietnam* (TRAWL10). The older learners in ICLE have a slightly wider repertoire of premodifiers, as illustrated in (27), suggesting again that multiple NP modification may be a matter of both linguistic and cognitive development. However, the figures are too small to say anything conclusive about premodifying nouns in the material.⁹

(27) *The northwest highland region of rugged mountains and high plateaus* had their contours softened by prolonged erosion and glaciation... (ICLE-NO)

4.5 Multi-word units with of

Multi-word units (MWUs) with *of* are operationalized as word combinations that are fixed or semi-fixed and show semantic unity, and are therefore likely to be taught and learnt as chunks. Many of them are grammaticalized and/or lexicalized (see, e.g., Brems 2003 for quantifiers with *of*) and are found in learner dictionaries. Partitive expressions such as *one of*, *some of*, *many of* + *(a) part of* have not been included. The combinations regarded as MWUs are thus the following:

- Multi-word verbs, e.g., *think of*, *take care of*
- Complex prepositions, e.g., *out of*, *instead of*
- Some part-whole expressions, e.g., *the beginning of*, *the end of*, *the rest of*
- General expressions of measurement, e.g., *a lot of*, *plenty of*
- Fixed-phrase adverbials, e.g., *of course*
- Hedging expressions, e.g., *kind of*, *sort of* and analogous support noun expressions (*a kind/sort/type of X*)

⁹ Durrant and Brenchley (2023: 252) did not find any significant increase in the use of premodifying nouns in their longitudinal study of NP complexity in GiG. However, adult writers used premodifying nouns more than the year 11 writers in GiG (p. 253).

The hypothesis is that MWUs will account for a larger share of *of*-phrases at lower proficiency levels, where usage may be more dependent on prefabricated units (cf. Evang 2022). This seems to be borne out in the material, as shown in Figure 5.

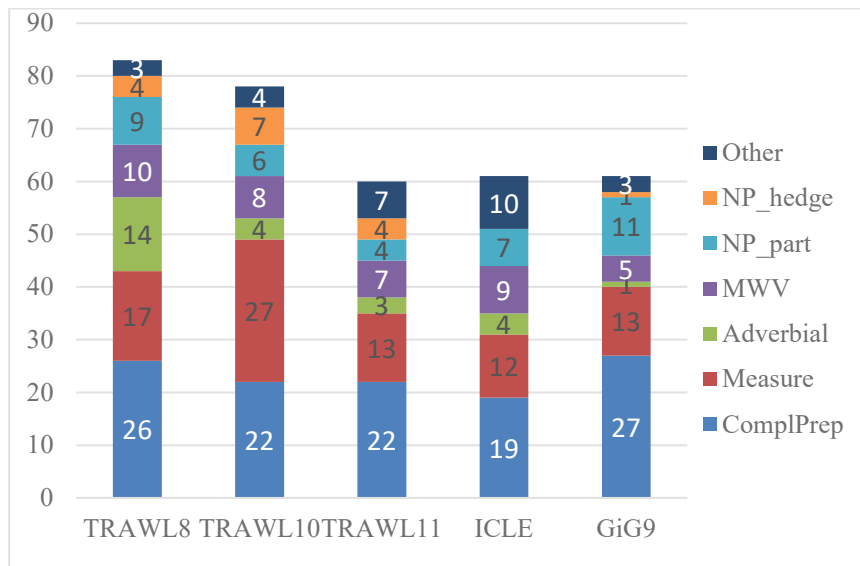


Figure 5: The frequencies of MWUs across the corpora (raw numbers)

Figure 5 shows raw frequencies of MWUs in the subcorpora while also indicating the proportion of MWUs in each random sample of 200. There is a clear dip in frequency from year 10 to year 11, i.e., MWUs account for a larger share of *of*-constructions in years 8 and 10. This is in line with Evang's (2022) and Garner's (2016) findings, although they investigated other types of phrasal units.

Complex prepositions are the most frequent type of MWU in all the subcorpora except TRAWL10, especially *because of*, *instead of*, *out of*. Measure expressions are also generally frequent, e.g., *a lot of*, and *a couple of*, especially in year 10, where *a lot of* occurs 23 times, illustrated in (28).

- (28) *A lot of teenagers, especially girls, watch Youtubers.*
(TRAWL10)

As noted above, the expressions *of course* and *first of all* (see example (2)) are recurrent and, moreover, the only MWUs with *of* that function as adverbials. The hedging expressions in the corpus are *sort of*, *kind of* and *a bit of*, exemplified in (29). Examples of ‘other’ include some support noun expression, such as *a kind/type of* N2, *point of view*, and the one in (30).

(29) ...there is *kind of* a distance between them. (TRAWL11)

(30) ... and *my sense of direction* has never been good... (GiG9)

From the above discussion, it is no surprise that the most frequently recurring MWUs represent either complex prepositions or quantifiers, as shown in Table 5, while *of course* and *kind of* occur in third place in TRAWL8 and ICLE-NO, respectively. There is little variation across the learner samples, but GiG9 has a slightly different selection.

Table 5: Top 3 MWUs across subcorpora

	MWU 1	MWU 2	MWU 3
TRAWL8	<i>a lot of</i> (17)	<i>out of</i> (13)	<i>of course</i> (11)
TRAWL10	<i>a lot of</i> (23)	<i>because of</i> (13)	<i>kind of</i> (8)
TRAWL11	<i>because of</i> (13)	<i>a lot of</i> (11)	<i>out of</i> (4)
ICLE-NO	<i>a lot of</i> (9)	<i>instead of</i> (6)	<i>kind of</i> (5)
GiG9	<i>out of</i> (11)	<i>on top of</i> (6)	<i>instead of</i> , <i>lots of</i> , <i>the end of</i> (5)

5. Concluding Remarks

This study has investigated expressions with *of* in texts by Norwegian learners of English (aged c.13–16) compared to equivalent expressions in texts by university students of English and by young L1 users of English (aged c. 13). It was found that expressions with *of* increase in frequency across levels, with the greatest increase occurring between years 10 and 11.

Most of the investigation was based on samples of 200 concordance lines, which facilitated a focus on the proportions of different types of *of*-expressions rather than their overall frequencies. The dominant environment for *of* is in NPs, mostly in postmodifying *of*-phrases, but also, e.g., as part of quantifiers such as *a lot of*. The proportion of NPs with *of*

in the samples increases between years 8 and 10 in TRAWL but then stabilizes in the L2 material and becomes similar to the L1 material. Complex prepositions are the second most frequent context for *of*, while independent PPs, multi-word verbs and adjective phrases are rather rare.

The second research question focused on the use of NPs with *of*. As expected, there are qualitative differences between levels regarding the meaning of N1 *of* N2 sequences. The combined proportions of quantifying meanings (measure and share) and ‘part-of-whole’ decrease with study level, from 63% in year 8 to 44% in year 11. In contrast, the proportion of NPs with nominalized heads increases across TRAWL, with a clear peak in year 11 (higher than ICLE-NO). Similarly, several uses that are unlike Norwegian constructions (possessive, support; see Hasselgård 2016) and/or less formulaic (e.g., feature) increase from secondary (TRAWL) to tertiary (ICLE-NO) level.

Curiously, TRAWL11 seems more advanced than ICLE-NO regarding the share of NPs with *of* and the use of nominalization. It is impossible to ascertain why this should be, but one may speculate that the age difference between the corpora may play a role: the ICLE-corpus was compiled around 2000, and the TRAWL material at least 15 years later. During this time the starting age for English instructions was lowered from fourth to first grade, and the presence of English in Norwegian society increased (Gyllstad et al. 2024). It is thus conceivable that 16-year-olds post 2015 were more proficient than students aged 20+ in 2000 due to greater exposure to English.

L1 English users were selected from year 9 in the GiG corpus to represent writers in the same age bracket as the youngest learners in the material (TRAWL8). Interestingly, their use of *of* mostly resembles those of TRAWL 10/11, thus suggesting that age is less important than L1 background. However, as regards the simultaneous use of pre- and postmodifiers (Table 4), the GiG9 figures were similar to those of TRAWL8.

As hypothesized, multi-word units account for a decreasing share after year 10, implying that more of the *of*-expressions represent open choice after this stage. The proportions of MWUs are similar across GiG9, TRAWL11 and ICLE-NO, suggesting a more independent use of *of*-expressions. In other words, the samples show that the learners use *of* in increasingly varied and less stereotypical expressions, thus indicating ‘a

larger and more productive phraseological inventory as learners move to more advanced levels of study' (Garner 2016: 48).

There were few errors with *of* in the material, and the number decreased with study level. The most common error type was to use *of* instead of a different preposition, especially in contexts where Norwegian would use the cognate preposition *av*. In a small number of instances, there were issues with the complementation rather than the choice of the preposition *of*, as exemplified in (14) above. As expected, constructions where *of* corresponds to Norwegian *av*, e.g., in most part, share and measure expressions, appeared unproblematic for the learners. An integrated contrastive analysis (Granger 2015) including a comparison with Norwegian L1 data would be able to pinpoint further issues of positive and negative transfer regarding *of*-constructions.

The use of complex NPs has been shown to vary across individual writers; e.g., Rørvik (2022) and Díez-Bedmar and Pérez-Paredes (2020). The sampling method adopted for the present study is thus a limitation in that it precludes attention to individual variation and individual writing development. This must remain a topic for further investigation. Furthermore, because of the design of TRAWL (Dirdal et al. 2022) it was not possible to differentiate between genres/registers even though there is good reason to believe that register is significant for the use of complex NPs, as indeed demonstrated by Durrant and Brenchley (2023) for literary and non-literary texts in GiG. While the samples from TRAWL and GiG are believed to be as comparable as the data allow, register could be better controlled for in a future study. It should be reiterated that the study of NP complexity in this investigation is limited to those containing *of*. Thus, it offers only a partial picture of NPs, despite *of*-phrases being the most common type of postmodifier (Biber et al. 1999: 635). On the other hand, this study enlarges the picture by investigating *of* in all its uses. To a greater extent than in Groom's (2007) study of academic English, the present material shows *of* in multi-word units such as complex prepositions and quantifiers and as a bound preposition in adjective complementation. An advantage of the sampling method is that it has pinpointed areas where usage changes (pseudo-)longitudinally or across L1 groups. Thus, the present investigation has shown how *of* can provide a window to the phraseological repertoire of learners. Hopefully, it has also inspired further exploration of, e.g., the use of nominalizations and support nouns modified by *of* across levels, registers and individuals.

References

- Anthony, Laurence. 2020. AntConc (Version 3.5.9) [Computer software]. Waseda University. <https://www.laurenceanthony.net/software/AntConc>.
- Biber, Douglas and Bethany Gray. 2016. *Grammatical complexity in academic English. Linguistic change in writing*. Cambridge: Cambridge University Press.
- Biber, Douglas, Bethany Gray, and Kornwipa Poonpon. 2011. Should we use characteristics of conversation to measure grammatical complexity in L2 writing development? *TESOL Quarterly* 45(1): 5–35. <https://doi.org/10.5054/tq.2011.244483>.
- Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad, and Edward Finegan. 1999. *Longman grammar of spoken and written English*. London: Longman.
- Brems, Lieselotte. 2003. Measure noun constructions: An instance of semantically-driven grammaticalization. *International Journal of Corpus Linguistics* 8(2): 283–312.
- Bulté, Bram, and Alex Housen. 2012. Defining and operationalising L2 complexity. In *Dimensions of L2 performance and proficiency: Complexity, accuracy and fluency in SLA*, edited by Alex Housen, Folkert Kuiken, and Ineke Vedder, 21–32. Amsterdam: John Benjamins.
- Díez-Bedmar, María Belén, and Pascual Pérez-Paredes. 2020. Noun phrase complexity in young Spanish EFL learners' writing: Complementing syntactic complexity indices with corpus-driven analyses. *International Journal of Corpus Linguistics* 25(1): 4–35.
- Dirdal, Hildegunn, Ingrid Kristine Hasund, Eli-Marie Drange, Eva T. Vold, and Elin Maria Berg. 2022. Design and construction of the Tracking Written Learner Language (TRAWL) corpus: A longitudinal and multilingual young learner corpus. *Nordic Journal of Language Teaching and Learning* 10(2): 115–135.
- Durrant, Philip, and Mark Brenchley. 2018. *Growth in Grammar Corpus*. <https://www.exeter.ac.uk/research/centres/languageandliteracy/projects/growinggrammar/#a0>.
- Durrant, Philip, and Mark Brenchley. 2023. Development of noun phrase complexity across genres in children's writing. *Applied Linguistics* 44(2): 239–264.

- Evang, Kaja H. S. Ø. 2022. A bigram-based exploration of phraseological development in Norwegian secondary school students' writing in English L2. *Nordic Journal of Language Teaching and Learning* 10(2): 352–382.
- Garner, James R. 2016. A phrase-frame approach to investigating phraseology in learner writing across proficiency levels. *International Journal of Learner Corpus Research* 2(1): 31–67.
- Granger, Sylviane. 2015. Contrastive interlanguage analysis: A reappraisal. *International Journal of Learner Corpus Research* 1(1): 7–24.
- Granger, Sylviane. 2024. From early to future learner corpus research. *International Journal of Learner Corpus Research* 10(2): 247–279.
- Granger, Sylviane, Maïté Dupont, Fanny Meunier, Henrik Naets, and Magali Paquot (eds.). 2020. *International Corpus of Learner English* (Version 3). Louvain-la-Neuve: Presses Universitaires de Louvain.
- Groom, Nicholas. 2007. Phraseology and epistemology in humanities writing PhD thesis, University of Birmingham. British Library EThOS.
- Gyllstad, Henrik, Pia Sundqvist, Elke Peters, Ulrikke Rindal, Gustaf B. Skar, and Nasrin Ulfat. 2025. Young learners' receptive L2 English vocabulary knowledge in relation to extramural English exposure at the onset of formal instruction in Norway. *International Review of Applied Linguistics in Language Teaching*. doi: 10.1515/iral-2024-0289.
- Halliday, M. A. K. 1993. Some grammatical problems of scientific English. In *Writing science: Literacy and discursive power*, edited by M. A. K. Halliday and James R. Martin, 69–85. Pittsburgh: University of Pittsburgh Press.
- Hasselgård, Hilde. 2016. The way of the world: The colligational framework 'the N1 of the N2' and its Norwegian correspondences. *Nordic Journal of English Studies* 15(3): 55–79.
- Hasselgård, Hilde. 2019. The nature of the essays: The colligational framework 'the N of the N' in L1 and L2 novice academic English. *Studies in Variation, Contacts and Change in English* 20.

- Hasselgård, Hilde. 2024. Periphrastic genitive constructions in English and Norwegian. In *Contrastive corpus linguistics: Patterns in lexicogrammar and discourse*, edited by Anna Čermáková, Hilde Hasselgård, Marketa Malá, and Denisa Šebestová, 62–86. London: Bloomsbury Academic.
- Hasund, Ingrid Kristine. 2022. Genres in young learner L2 English writing: A genre typology for the TRAWL (Tracking Written Learner Language) corpus. *Nordic Journal of Language Teaching and Learning* 10(2): 242–271.
- Hunston, Susan. 2008. Starting with the small words. Patterns, lexis and semantic sequences. *International Journal of Corpus Linguistics* 13(3): 271–295.
- Keizer, Evelien. 2007. *The English noun phrase*. Cambridge: Cambridge University Press.
- Kreyer, Rolf, and Steffen Schaub, 2018. The development of phrasal complexity in German intermediate learners of English. *International Journal of Learner Corpus Research* 4(1): 82–111.
- Nøklestad, Anders, Kristin Hagen, Janne B. Johannessen, Michal Kosek, and Joel Priestley. 2017. A modernised version of the Glossa corpus search system. In *Proceedings of the 21st Nordic Conference on Computational Linguistics*: 251–254.
- OED = *Oxford English Dictionary Online*. n.d. <https://www.oed.com>.
- Parkinson, Jill, and Jean Musgrave. 2014. Development of noun phrase complexity in the writing of English for Academic Purposes students. *Journal of English for Academic Purposes* 14: 48–59.
- Ravid, Dorit, and Ruth A. Berman. 2010. Developing noun phrase complexity at school age: A text-embedded cross-linguistic analysis. *First Language* 30(1): 3–26.
- Rørvik, Sylvi. 2022. Noun-phrase complexity in the texts of intermediate-level Norwegian EFL writers: Stasis or development? *Nordic Journal of Language Teaching and Learning* 10(2): 298–326.
- Sinclair, John. 1991. *Corpus, Concordance, Collocation*. Oxford: Oxford University Press.
- Staples, Shelley, Jesse Egbert, Douglas Biber, and Bethany Gray. 2016. Academic writing development at the university level. *Written Communication* 33(2): 149–183.

Staples, Shelley, Bethany Gray, Douglas Biber, and Jesse Egbert. 2023. Writing trajectories of grammatical complexity at the university: Comparing L1 and L2 English writers in BAWE. *Applied Linguistics* 44(1): 46–71. <https://doi.org/10.1093/applin/amac047>.

Corpora

Growth in Grammar Corpus (GiG), see Durrant and Brenchley (2018).

The International Corpus of Learner English, Norwegian component (ICLE-NO). <https://uclouvain.be/en/research-institutes/ilc/cecl/icle.html>.

The TRAWL Corpus – Tracking Written Learner Language. <https://tekstlab.uio.no/rawl/>.