NP Complexity in EFL Argumentative Writing at the CEFR B1, B2 and C1 levels: Corpus-driven Fine-grained Measures

Complejidad del sintagma nominal en escritura argumentativa en inglés como lengua extranjera en los niveles B1, B2 y C1 del MCER: medidas pormenorizadas extraídas de un corpus

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Abstract

Fine-grained measures of Noun Phrase (NP) complexity are being employed to describe linguistic complexity in learner language. However, the use of pre-established fine-grained NP complexity indices prevents researchers from analysing the actual range of NP complexity types that learners display in different text types and at different levels. Likewise, the use of learner corpora which are not aligned with the CEFR hinders the identification of NP complexity criterial features, i.e. NP complexity types which show statistically significant differences in their use at different levels, between CEFR levels. This study contributes to the existing literature by exploring NP complexity in L1 Spanish EFL learner writing using corpus-driven fine-grained measures obtained from a CEFR-aligned learner corpus with two main objectives: a) to analyse the variety of NP complexity types employed at the CEFR B1, B2 and C1 levels; and b) to reveal NP complexity criterial features at those levels. After manually parsing 6,182 NPs in 140 argumentative texts (44 texts at

B1, 50 at B2 and 46 at C1), 39 NP complexity types were identified and employed as fine-grained NP complexity measures. The findings reveal an increase in the variety of NP complexity types at the CEFR B2 level. The results highlight the importance of multiple premodification and simple or multiple postmodification, especially prepositional phrases, in NP complexity development across B1, B2 and C1. Specific NP complexity criterial features are also found at B2 and C1. This study underscores the use of corpus-driven fine-grained complexity measures to describe NP complexification in different text types and CEFR levels.

Resumen

En la actualidad se utilizan las medidas pormenorizadas de complejidad sintáctica del sintagma nominal (SN) para describir la complejidad lingüística en la producción de alumnado de lenguas extranjeras. Sin embargo, el uso de medidas disponibles en listas ya preestablecidas evita el análisis de la variedad de tipos de complejidad del SN en diferentes tipos de textos y niveles. Además, el uso de corpus de estudiantes que no están alineados con el MCER limita la identificación de características definitorias de la complejidad del SN, es decir, aquellos tipos de complejidad en el SN que muestran diferencias estadísticamente significativas en su uso entre diferentes niveles del MCER. Este estudio explora la complejidad del SN en la escritura de alumnado cuya lengua materna es el español utilizando medidas pormenorizadas obtenidas de un corpus de estudiantes alineado con el MCER con dos objetivos: a) analizar la variedad de tipos de complejidad del SN empleados en los niveles B1, B2 y C1 del MCER; y b) revelar las características definitorias de la complejidad del SN en dichos niveles. Después de analizar sintácticamente de forma manual 6182 sintagmas nominales en 140 textos, se identificaron y utilizaron 39 tipos de

complejidad del SN como medidas pormenorizadas de la complejidad del SN. Los datos muestran un aumento en la variedad de tipos de complejidad del SN en B2. Los resultados subrayan la importancia de la premodificación múltiple y la postmodificación simple y múltiple, especialmente los sintagmas preposicionales, en el desarrollo de la complejidad del SN desde el nivel B1 al C1. Se han encontrado también medidas pormenorizadas específicas de complejidad del SN que son características definitorias en los niveles B2 y C1. Este estudio subraya el uso de medidas pormenorizadas extraídas de un corpus para describir la complejización del SN en diferentes tipos de texto y niveles del MCER.

Palabras clave: complejidad del sintagma nominal, análisis derivado de un corpus, medidas pormenorizadas, escritura argumentativa, niveles del MCER, inglés como lengua extranjera.

1. Introduction

Complexity, accuracy and fluency (CAF) compose Skehan's (1989) three-dimensional L2 proficiency model. Complexity, as defined by Ellis (2003, p. 340), is '[t]he extent to which the language produced in performing a task is elaborate and varied'. Two main aspects in complexity are, therefore, important: the degree of elaboration or sophistication and the range of sophistication of the language produced (Bulté & Housen, 2014; De Clercq & Housen, 2017; Lu, 2011; Ortega, 2003; Wolfe-Quintero et al., 1998). Following Bulté and Housen (2012, 2014), syntactic complexity is a subcomponent of linguistic complexity.

L2 syntactic complexity has been analysed since the late 1970s to describe learner language, propose indices to describe language proficiency and track language development (Bulté & Housen, 2014). The first studies on L2 syntactic complexity adopted the large-grained syntactic complexity measures at the clause and sentence levels employed in L1 writing complexity research. The most frequently employed measures were the T-unit and any measure which considered it as part of a ratio (see the reviews by Ortega, 2003;

Wolfe-Quintero et al., 1998). However, the usefulness of the T-unit, which focuses on clausal complexity, was later questioned (Biber et al., 2011, 2013; Kyle & Crossley, 2018; Lu, 2011; Staples et al., 2016). Evidence showed that syntactic complexity develops with proficiency in different stages, which range from uncoordinated utterances to coordination, subordination and, finally, complexification of the NP at the more advanced stages of writing development, especially in academic writing (Norris & Ortega, 2009; Wolfe-Quintero et al., 1998). In fact, more proficient learners are found to complexify more at the phrase level (Biber et al., 2011; Biber, et al., 2016; Casal & Lee, 2019; Grant & Ginther, 2000; Kyle, 2016; Kyle & Crossley, 2018; Lu, 2011; Norris & Ortega, 2009; Parkinson & Musgrave, 2014; Staples et al., 2016). This complexification of the NP at advanced levels parallels the characteristics of academic writing (Biber et al., 2011, 2016; Biber & Gray, 2011; Norris & Ortega, 2009; Ortega, 2003), which relies on 'phrasal structures, specially complex phrases and phrasal modifiers' (Biber, et al., 2013, p. 192).

The multidimensional nature of complexity (Biber et al., 2011; Norris & Ortega, 2009), which includes global, clausal and phrasal complexity, should be taken into account for a comprehensive description of syntactic complexity in (learner) language at different developmental writing stages. To analyse it, research employs large-grained indices of syntactic complexity at the clause and sentence levels (with a long tradition in the literature) as well as more recent fine-grained indices, which capture phrase-internal complexification (Biber et al., 2011; Casal & Lee, 2019; De Clercq & Housen, 2017; Kuiken & Vedder, 2019; Kyle, 2016; Kyle & Crossley, 2018; Lan et al., 2022; Norris & Ortega, 2009).

The results obtained in the literature using fine-grained NP complexity indices offer valuable insights regarding NP complexity (see Section 3). However, the findings are difficult to compare because of two main reasons. First, the analyses are conducted using different fine-grained NP complexity measures or using the same measure, but differently conceptualized (See Section 2). Furthermore, the use of pre-established lists of fine-grained NP

complexity indices prevents the analysis of the actual variety of NP complexity types learners employ.

Second, the learner data analysed, i.e. learner corpora, include students' productions at different proficiency levels which have frequently been determined by the students' institutional status (i.e. the academic year they are enrolled in) or their standardised test results. The use of these proficiency level proxies, however, presents some limitations: a) students at different proficiency levels frequently coincide in the same class; and b) the results of a test taken previously by one student may not faithfully reflect his/her proficiency level in a text produced later in time. The consideration in the literature of these measures as a proxy of the students' proficiency level may therefore prevent reliable descriptions of learner language at a specific or different proficiency levels. Nowadays, the levels in the Common European Framework of Reference for Languages (CEFR, Council of Europe, 2001) are being employed as the proficiency metric in the learning, teaching and assessment of languages. However, the number of publications which have employed CEFR-aligned learner corpora to analyse NP complexity is still low (but see Khushik & Huhta, 2022). The main reason for such limitation is the scarce number of CEFR-aligned learner corpora, especially those in which the learner production has been reliably evaluated and classified into different CEFR levels. The compilation and exploitation of such type of reliably CEFR-aligned learner corpora is recommended as their analysis may result in a more reliable study of learner language at different proficiency levels and, using a cross-sectional methodology, in the identification of the so-called 'criterial features', i.e. 'properties of learner English that are characteristic and indicative of L2 proficiency at each of the [CEFR] levels' (Hawkins & Filipović 2012, p. 11).

Therefore, the analysis of the literature shows that, to achieve a comprehensive understanding of NP complexity development, it is necessary to: a) analyse corpus-driven fine-grained NP complexity measures; b) employ CEFR levels as an indicator of language proficiency; and c) reveal criterial features at the different CEFR

levels.

This study contributes to the existing NP complexity literature by analysing NP argumentative writing by L1 Spanish English as a Foreign Language (EFL) students at three CEFR levels, employing corpus-driven fine-grained NP complexity measures and identifying NP complexity criterial features. The fine-grained NP complexity measures used were derived from the manual parsing of all the NPs in the learner corpus, which resulted in the description of NP complexification in argumentative writing considering the actual variety of NP complexity types and their frequencies across the different CEFR levels.

There are two main research questions in this study:

RQ1. Does the variety of NP complexity types employed in argumentative writing by L1 Spanish learners of English differ at the CEFR B1, B2 and C1 levels?

RQ2. Can any NP complexity type be considered a criterial feature in the description of argumentative writing by L1 Spanish learners of English at the CEFR B1, B2 or C1 levels?

2. Analysing NP Complexity: Fine-grained NP Complexity Measures

Informed by the research syntheses in Wolfe-Quintero et al. (1998) and Ortega (2003), both the L2 Syntactic Complexity Analyzer (L2SCA) (Lu, 2010) and the Tool for the Automatic Analysis of Syntactic Sophistication and Complexity (TAASC) (Kyle, 2016) automatically calculate measures at the global, clausal and phrasal levels (even though learner errors may challenge the reliability of the output, see Châu & Bulté, 2023).

L2SCA calculates 14 complexity indices divided into five measures, one of which is degree of phrasal sophistication. To analyse phrasal sophistication, complex nominals are considered. The posterior use of the Stadford Tregex Tool employing the

commands in Lu (2010) makes it possible to extract and tally the complex nominals. This facilitates an analysis of NP complexity types and, consequently, their use as fine-grained NP complexity measures. An example of this use is Casal and Lee (2019), who analysed five types of complex nominals, namely pre-adjective, post-preposition, participle, possessive noun and relative clause. Today, a rewrite of L2SCA, NeoSCA (Tan, 2022), facilitates the researchers' analysis of the parsed data.

TAASSC (Kyle & Crossley, 2018) includes traditional syntactic complexity indices (i.e. those in Lu, 2010), fine-grained clausal indices and fine-grained phrasal indices. The phrasal indices consider seven NP types (nominal subject, passive nominal subject, agent, nominal complement, direct object, indirect object and prepositional object) and ten phrasal dependent types, namely determiner, adjective modifiers, prepositional phrases (PPs), possessives, verbal modifiers, nouns as modifiers, relative clause modifiers, adverbial modifiers, and the conjunctions 'and' and 'or'. TAASSC, therefore, complements large-grained indices of syntactic complexity with fine-grained ones. Examples of studies which have employed TAASSC include Kyle and Crossley (2018) and Díez-Bedmar and Pérez Paredes (2020).

Another influential paper which has provided fine-grained indices to analyse NP complexity was published by Biber et al. (2011). This study revealed clausal and phrasal features in L1 speech and academic writing and provided a developmental index of grammatical complexity divided into 5 stages, which was later checked against learner data in Biber et al. (2016). Eleven of the measures in the index describe NP syntactic complexity, namely the use of attributive adjectives, relative clauses, nouns as modifier, of-PPs, PPs with other prepositions, -ing clauses, -ed clauses, infinitive clauses, preposition + ing, noun complement clauses and appositive NPs. These fine-grained indices, with some modifications in some cases (see, for instance, Ansarifar et al., 2018; Parkinson & Musgrave, 2014; Sarte & Gnevsheva, 2022; etc.) have been extensively used in the literature (see, for instance, Ansarifar et al., 2018; Lahuerta Martínez,

2023; Lan & Sun, 2019; Lan et al., 2019; Parkinson & Musgrave, 2014; Satre & Gnevsheva, 2022). NP complexity is frequently analysed manually when these fine-grained indices are considered (see Ansarifar et al., 2018; Bulté & Housen, 2018; Parkinson & Musgrave, 2014; Sarte & Gnevsheva, 2022), which is time-consuming and requires expert researchers to parse the NPs (Ansarifar et al., 2018; Kyle & Crossley, 2018; Lu, 2011).

Finally, the manual parsing of the NPs in a learner corpus employing a corpus-driven approach, i.e. without using a predetermined list of modifiers, has also offered fine-grained NP complexity measures to track NP complexity development in L1 Spanish EFL secondary school writing (see Díez-Bedmar & Pérez-Paredes, 2020). These fine-grained NP complexity measures may be used in combination with other indices from automatic software for a more comprehensive analysis (as was the case of the study in Díez-Bedmar & Pérez-Paredes, 2020) but can also be employed on their own.

3. Using Fine-grained Measures to Study NP Complexity in English Learner Writing

Recent publications have employed fine-grained measures, either in combination with large-grained ones (Casal & Lee, 2019; Lahuerta Martínez, 2023) or by themselves (Ansarifar et al., 2018; Bao, 2024; Díez-Bedmar & Pérez-Paredes, 2020; Lan & Sun, 2019; Parkinson & Musgrave, 2014; Sarte & Gnevsheva, 2022; Sun & Lan, 2019) to analyse NP syntactic complexity in EFL learner written production.

Casal and Lee (2019) employed L2SCA measures to analyse syntactic complexity in research papers by EFL students from different L1 backgrounds in three different levels (as rated by instructors). For a more comprehensive analysis of NP complexity, five types of complex nominals were further analysed. The results showed that high-rated student papers were characterised by the use of adjective premodification, preposition postmodification and

participle modification. In the study by Lahuerta Martínez (2023) which analysed the development of syntactic complexity over four months in expository texts written by L1 Spanish students of English (mainly at C1, as determined by the Oxford Placement Test), syntactic sentential, clausal and phrasal complexity measures (mean length of NPs) were employed. The fine-grained measures of NP syntactic complexity employed were the noun modifiers in academic writing in Biber et al. (2011). The results revealed significant increases in the use of adjective and noun sequences to premodify the head of the NP, the use of prepositions + ing clauses, the use of non-finite infinitive clauses, and a significant decrease in the use of nouns as premodifiers and of-PPs.

Among the studies which have focused only on fine-grained NP complexity indices, the publication by Parkinson and Musgrave (2014) compared NP complexity in the production by English for Academic Purposes (EAP) and MA students using the NP complexity indices in Biber et al. (2011). The results of the comparison between both groups of students showed that EAP students used more attributive adjectives to premodify the head of the NP than MA students did, whereas MA students employed more participial adjectives and more nouns to premodify the head of the NP. The use of possessive nouns to premodify the head of the NP was also higher in MA student production than in EAP students'. As for postmodification, only a higher frequency of use of PPs (other than of-PPs) when the meaning is abstract was found in MA students.

The NP features in Biber et al.'s (2011) developmental index were also employed to analyse NP syntactic complexity in abstracts written by L1 Persian MA and PhD students of English and expert writers (Ansarifar et al., 2018). The findings regarding learner writing at the MA and PhD level revealed that MA and PhD students only differ in the PhD students' statistically significant more frequent use of nouns as premodifiers.

Lan and Sun (2019) and Lan et al. (2019) also considered the noun modifiers in Biber et al. (2011) to analyse argumentative texts

by first-year university L1 Mandarin EFL learners. The results indicated that more proficient learners employ more complex NPs (as determined by the number of modifiers in the NP), more attributive adjectives and relative clauses. However, lower proficiency level students used more nouns as modifiers and of-PPs. Although nouns as modifiers and PPs were found to be typical of proficient students, two important issues played an important role in the findings: the topic effect and the function of the PPs in quantifying determiners and 'partitive constructions, such as *part of*, versus their use to modify abstract head nouns, as in advantages of games'.

To analyse the effect of proficiency level (low B1, high B1 and B2, as determined by the students' results on standardized tests) and topic (part-time job and smoking) on argumentative writing, Sarte and Gnevsheva (2022) studied NP complexity in the International Corpus Network of Asian Learners of English. The noun modifiers in Biber et al. (2011) were employed. Their data showed that low level students used nouns as modifiers less frequently. Another important finding was the topic effect on NP complexity. The more cognitively demanding topic (smoking) triggered a higher frequency of use of postmodifiers than premodifiers, whereas in the less cognitively demanding topic (part-time job) premodification use was favoured. The students' L1 was also shown to affect their use of NP complexity types, as students may prefer some over others due to the NP complexity types employed in their L1s.

The research by Díez-Bedmar and Pérez-Paredes (2020) is different from the previous ones because it did not employ Biber et al.'s (2011) NP modifiers. In their cross-sectional study of NP complexity in L1 Spanish EFL secondary school students' descriptive writing (at A2 and B1 levels, as determined by their institutional status) the NP indices in TAASSC were complemented by corpus-driven NP complexity indices, which were obtained thanks to the manual parsing of the NPs in the learner corpus. The results revealed that NP complexity in the last year of non-compulsory education was characterized by statistically more frequent uses of

bare NPs as well as more frequent instances of multiple premodification than in the previous academic year. The analysis of the variety of NP complexity types employed by the learners showed that the higher the school year the wider the range of NP complexity types that were made use of.

NeoSCA (Tan, 2022) and a later manual verification of NP analysis was employed by Bao (2024) to analyse NP complexity in argumentative writing and speaking by Chinese students of English at three levels (low, middle and high). The modifiers analysed were premodifiers (including attributive adjectives, possessive pronouns or nouns, premodifying nouns, premodifying articles, and nouns connected by a coordinating conjunction), PPs which postmodify nouns, non-finite verb phrases (including infinitives and gerunds in the subject position, infinitives and participles premodifying or postmodifying nouns as well as combinations of PPs and present participles), relative clauses and nominal clauses (dependent clauses that function as nouns like that-clauses and wh-clauses). The results obtained found no differences in the use of NP modifiers or the specific use of premodifiers and PPs at the different proficiency levels analysed. Only the use of non-finite verb phrases showed statistically significant differences between levels.

The findings in these studies, conducted with different methodologies, point to the higher proficiency students' more frequent use of bare NPs (Díez-Bedmar & Pérez-Paredes, 2020) and multiple NPs (Lan and Sun, 2019; Lan et al., 2019). Concerning premodification, the selection of nouns to premodify the head of the NP has been found to characterize NP complexity at higher levels (Ansarifar et al., 2018; Lan & Sun, 2019; Parkinson & Musgrave, 2014; Sarte & Gnevsheva, 2023), although some studies contradict this finding and report on the importance of adjectives to premodify the head of the NP (Casal & Lee, 2019; Lan & Sun, 2019). The use of participial adjectives (Parkinson and Musgrave, 2014) and multiple premodification (Díez-Bedmar & Pérez-Paredes, 2020; Lahuerta Martínez, 2023) also characterise higher proficiency level writing. Regarding postmodification, the more frequent use of PPs (Casal &

Lee, 2019) and multiple PPs (Lahuerta Martínez, 2023) are found in more proficient learner writing. The increase in PPs which are not introduced by 'of' has also been reported as a characteristic of proficient learners (Parkinson & Musgrave, 2014). Other features of NP complexity at the higher levels include a more frequent use of relative clauses (Lan & Sun, 2019), non-finite verb phrases (Bao, 2024), to-infinitive ones (Lahuerta Martínez, 2023) and -ing ones (Casal & Lee, 2019).

4. Methodology

4.1. The Learner Corpus

The learner corpus used in this study is a subsection of the FineDesc Learner Corpus. This learner corpus is composed of pass-only candidate texts in the language accreditation exam CertAcles Exam suite at the CEFR B1, B2 and C1 levels. Two independent CEFR-expert raters had evaluated each exam and confirmed that the texts are at exam level, which ensures that the texts in the FineDesc Learner Corpus are at the specified CEFR level.

The subsection analysed in this study is composed of a total of 140 opinion essays written at the CEFR B1, B2 and C1 levels (Table 1).

Table 1. *Subsection of the FineDesc Learner Corpus in this study*

CEFR level	No. texts	No. words	No. NPs
B1	44	7,868	1,247
B2	50	11,723	2,430
C1	46	12,522	2,505
Total	140	32,113	6,182

4.2. Corpus Annotation

Following a three-step process, the 6,182 NPs in the learner corpus were manually annotated to account for all the NP complexity types. First, all the NPs were manually identified. Second, the NP complexity taxonomy by Díez-Bedmar & Pérez-Paredes (2020) was selected to annotate the NPs since it had been already used with L1 Spanish learner production at CEFR A2 and B1 levels. However, the piloting of the taxonomy with 20 texts per level (60 texts in total) revealed that the 29 NP complexity types in that taxonomy failed to describe all the NP complexity types in the learner corpus under study. Third, and as a result of the second step, a fine-tuned NP complexity taxonomy for this learner corpus (Appendix A) was designed and validated during a recursive annotation process which resulted in the annotation of all the NPs at the CEFR B1, B2 and C1 levels.

39 NP complexity types were identified in the learner corpus in this study (Table 2). They correspond to nine NP complexity groups; a) det NPs; b) simple premodification; c) multiple premodification; d) simple postmodification; e) multiple postmodification; f) simple premodification and postmodification; g) multiple premodification and simple postmodification; h) simple premodification and multiple postmodification; and i) multiple premodification and postmodification.[1]

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[1] Modification was subdivided into simple modification (pre- or postmodification) and multiple modification (pre- or postmodification). Following Biber et al. (2021), the term 'multiple' was employed when the premodification or the postmodification was realized by more than one word. Modification by a single word was designated as simple premodification or postmodification.

Table 2. *NP complexity groups and no. of NP complexity types*

	NP complexity group	Total no. of NP complexity types in the learner corpus per NP complexity group
Det NPs	Det NPs	1
Premodified NPS	Simple premodification	1
	Multiple premodification	1
Postmodified NPs	Simple postmodification	6
	Multiple postmodification	9
Pre- and postmodified NPs	Simple premodification and postmodification	5
	Multiple premodification and simple postmodification	2
	Simple premodification and multiple postmodification	8
	Multiple premodification and postmodification	6

Once the learner corpus had been annotated, the tags were retrieved to run the statistical tests. The non-normal distribution of the data ($p > .05$) required the use of non-parametric tests, Krukal-Wallis tests and subsequent Mann-Whitney U tests.

5. Results

5.1 Variety of NP Complexity Types at the CEFR B1, B2 and C1 Levels

Table 3 shows that B1 learners employed fewer NP complexity types than their B2 and C1 counterparts. While B2 and C1 students used 37 out of 39 possible NP complexity types, B1 students only employed 28.

The reduced number of NP complexity types per group at B1 is evident in four of the NP complexity groups. First, the simple postmodification group, in which B1 students used 4 out of the 6 NP complexity types, as they only employed appositions introduced by

PPs or pronouns to postmodify the head of the NP. Second, the multiple postmodification NP complexity group, since B1 students employed 7 out of the 9 possible NP complexity types. Comparative clauses and that-clauses were the two NP complexity types which were not employed. Third, the analysis of the simple premodification and multiple postmodification group reveals that these learners did not make use of any NP which has simple premodification and postmodification either by a that-clause or by two different structures. As a result, they drew upon 6 out of the 8 possible NP complexity types. Finally, in the multiple premodification and postmodification group, B1 students only used 2 out of the 6 possible NP complexity types, since they did not write NPs in which there is multiple premodification and multiple PPs, multiple adjective phrases (AdjPs), non-finite to-infinitive subordinate clauses, or non-finite -ed subordinate clauses.

B2 students, however, employed the same number of NP complexity types as C1 learners. Nevertheless, two differences were found. Within the simple postmodification group, B2 students, as was the case with their B1 counterparts, did not employ pronouns to postmodify the head of the NP (whereas C1 students did). In the simple premodification and multiple postmodification group, B2 students used simple premodification and that-clauses to postmodify the head of the NP (which C1 students did not).

The data in the learner corpus, therefore, reveal the limited variety of NP complexity types in L1 Spanish EFL B1 argumentative writing, especially in simple premodification, multiple postmodification, simple premodification and multiple postmodification and, finally, multiple pre- and postmodification. The analysis of the B1 data points to the absence of appositions which are not realized by a PP, postmodifying pronouns, comparative clauses, that-clauses, the multiple phrases employed by other learners (multiple PPs and multiple AdjPs) as well as non-finite subordinate clauses (to-infinitive subordinate clauses and -ed subordinate clauses) to postmodify the heads in their NPs. There are no outstanding differences, however, in the variety of NP complexity

types employed by B2 and C1 learners.

Table 3. Number of NP complexity types in the learner corpus and per CEFR level

NP complexity group	Total no. of NP types in the learner corpus per NP complexity group	B1	B2	C1
Det NP	1	1	1	1
Simple premodification	1	1	1	1
Multiple premodification	1	1	1	1
Simple postmodification	6	4	5	6
Multiple postmodification	9	7	9	9
Simple premodification/simple postmodification	5	4	5	5
Multiple premodification / simple postmodification	2	2	2	2
Simple premodification / multiple postmodification	8	6	8	7
Multiple premodification / multiple postmodification	6	2	5	5
	39	28	37	37

5.2 Criterial Features in NP Complexity

NP complexity groups

Kruskal-Wallis tests were run to analyse if the use of any NP complexity group is criterial at any of the CEFR levels under study. The results indicated differences regarding the number of NPs employed (n= 140, $H(2)$= 86.830, $p \leq$.001), bare NPs (n= 140, $H(2)$= 62.267 $p \leq$.001), NPs with simple premodification (n= 140, $H(2)$= 47.837, $p \leq$.001), multiple premodification (n= 140, $H(2)$= 22.953, $p \leq$.001),

simple postmodification ($n=$ 140, $H(2)=$ 42.899, $p\leq$.001), multiple postmodification ($n=$ 140, $H(2)=$ 39.371, $p\leq$.001), simple premodification and postmodification ($n=$ 140, $H(2)=$ 28.630, $p\leq$.001) and simple premodification and multiple postmodification ($n=$ 140, $H(2)=$ 23.319, $p\leq$.001).

Mann-Whitney tests showed differences between levels (Table 4). The results highlighted a significant increase in the frequency of NP use both from B1 to B2 and from B2 to C1. The findings also reveal the importance of three NP complexity groups, namely multiple premodification, simple postmodification and multiple postmodification in NP complexity development across the three CEFR levels under study, as their use statistically increases from the CEFR B1 level to B2 and then to C1. The more frequent use of these NP complexity groups characterizes, therefore, NP complexity at higher CEFR levels.

Apart from these developmental characteristics, the findings reveal that B2 NP complexity is characterised by a significant increase in the use of simple premodification (both in premodified NPs and in pre- and postmodified NPs, in which postmodification is either simple or complex). The frequency of use of premodification at B2 in these NP complexity groups is similar to that at C1, as there are no statistically significant differences between these learner groups. It may then be concluded that the increase in the frequency of use of premodification is a characteristic of L1 Spanish EFL B2 argumentative writing.

Table 4. *NP complexity groups: criterial features at the CEFR B2 and C1 levels*

	B1	B2	B2	C1
No. of NPs	U= 57.500; z= -7.905; p= .00; r= .83		U= 791.00; z= -2.635; p= .008; r= .27	
	M= 28.34; SD= 5.080; IQR= 22; Mdn= 29.00	M= 48.60; SD= 9.971; IQR= 15; Mdn= 49.00	M= 48.60; SD= 9.971; IQR= 15; Mdn= 49.00	M= 54.46; SD= 11.177; IQR= 13; Mdn= 53.00
Det NPs	U= 296.000; z= -6.103; p= .00; r= .63			
	M= 15.73; SD= 3.920; IQR= 5; Mdn= 15.50	M= 24.02; SD= 6.897; IQR= 32; Mdn= 23.50		
Simple premodification	U= 258.500, z= -6.396; p= .00. r= .63			
	M= 6.45; SD= 2.556; IQR= 11; Mdn= 6.00	M= 11.88; SD= 4.129; IQR= 24; Mdn= 11		
Multiple premodification	U= 850.500, z= -2.101; p= .036; r= .22		U= 753.000; z= -3.054; p= .002. r= .31	
	M= .43; SD= .625; IQR= 1; Mdn= .00	M= .78; SD= .815; IQR= 1; Mdn= 1.00	M= .78; SD= .815; IQR= 1; Mdn= 1.00	M= 1.59; SD= 1.359; IQR= 1; Mdn= 2.00
Simple postmodification	U= 575.500, z= -4.037; p= .000; r= .41		U= 728,000; z= -3.122; p= .002; r= -33	
	M= 1.41; SD= 1.369; IQR= 2; Mdn= 1.00	M= 3.04; SD= 2.060; IQR= 4; Mdn= 3.00	M= 3.04; SD= 2.060; IQR= 4; Mdn= 3.00	M= 4.74; SD= 2.760; IQR= 3; Mdn= 4.50
Multiple postmodification	U= 443.00, z= -5.050; p= .00; r= .51		U= 845.000; z= -2.253; p= .024; r= .23	
	M= 2.80; SD= 1.472; IQR= 2; Mdn= 2.50	M= 5.04; SD= 2.321; IQR= 3; Mdn= 4	M= 5.04; SD= 2.321; IQR= 3; Mdn= 4	M= 6.24; SD= 3.128; IQR= 4; Mdn= 6.50
Simple premodification and postmodification	U= 564.00; z= -4.346; p= .00; r= .46			
	M= .41; SD= .542; IQR= 1; Mdn= .00	M= 1.38; SD= 1.260; IQR= 2; Mdn= 1		
Simple premodification and multiple postmodification	U= 443.00; z= -4.057; p= .00; r= .42			
	M= .77; SD= 1.008; IQR= 2; Mdn= .00	M= 2.06; SD= 1.671; IQR= 2; Mdn= 2		

Premodified NPs

A significant increase in the use of simple premodification (1) was only found from B1 to B2 (Table 4),2 thus becoming a criterial feature of NP complexity at B2. As previously stated, however, multiple premodification (2 and 3), was revealed to be a criterial feature both at the CEFR B2 and C1 levels, therefore showing constant NP complexity development across the CEFR levels under study.

(1) Economic independence (9299)

(2) more efficient and clean ways of (9314)

(3) a hotly debated topic (600011)

Postmodified NPs

The analysis of the specific NP postmodification complexity types employed at the three levels by means of Kruskal-Wallis tests revealed differences regarding the use of postmodification by means of a PP ($n= 140$, $H(2)= 45.316$, $p\leq .05$), comparative phrase ($n= 140$, $H(2)= 5.807$, $p= .05$), multiple PPs ($n= 140$, $H(2)= 27.530$, $p\leq .05$), relative clause ($n= 140$, $H(2)= 11.991$, $p= .002$) and non-finite -ed subordinate clause ($n= 140$, $H(2)= 11.449$, $p= .003$). Table 5 shows the results of the Mann-Whitney tests conducted to analyse the differences in their use at the three CEFR levels.

The findings point to the role played by PPs, either simple or multiple, in the characterization of NP complexity at different CEFR levels. The data show that there is a statistically significant increase in the use of simple and multiple PPs (4 and 5) from B2 to C1. Therefore, the higher the CEFR level the more frequent the use of PPs to postmodify the head of the NP.

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[2] All examples are taken from the learner corpus. The annotation has been removed to make them more reader-friendly.

(4) The results of the exams (9286)

(5) remodelations of old buildings (600001)

B2 students were also found to increase their use of comparative phrases (6) and relative clauses (7), if compared to their B1 counterparts. No differences were however found with the C1 students' production, which points to a similar frequency of use of these postmodification structures by B2 and C1 students. Since the topics in the learner corpus were similar, the higher frequency of use of comparative clauses by B2 and C1 learners may be due to these students' familiarity with these structures, rather than a topic effect.

 (6) less variety than in the city (70068)

 (7) Many children who live in… (70043)

Finally, C1 learners significantly increased their use of non-finite subordinate -ed clauses to postmodify the head of the NP:

(8) A society prepared to this (900003)

Table 5. *Simple and multiple postmodification: criterial NP complexity types*

	SIMPLE POSTMODIFICATION			
	B1	B2	B2	C1
Postmodification by means of a simple prepositional phrase	*U*= 592.000; *z*= -3.945; *p*= .000; *r*= .41		*U*= 659.000; *z*= -3.417; *p*= .001; *r*= .35	
	M= 1.07 SD= 1.087 IQR= 2 Mdn= 1.00	*M*= 2.48 SD= 1.843 IQR= 3 Mdn= 2.00	*M*= 2.48 SD = 1.843 IQR = 3 Mdn= 2.00	*M*= 4.11 SD= 2.601 IQR= 3 Mdn= 4.00
Comparative phrase	*U*= 931.000; *z*= -2.395; *p*= .017; *r*= .41			
	M= .05 SD= .302 IQR= 0 Mdn= .00	*M*= .20 SD= .452 IQR=0 Mdn= 0		
	MULTIPLE POSTMODIFICATION			
	B1	B2	B2	C1
Multiple prepositional phrase	*U*= 649.000; *z*= -3.534; *p*= .000; *r*= .36		*U*= 801.000; *z*= -2.605; *p*= .009; *r*= -27	
	M= 1.02 SD= .952 IQR= 2 Mdn= 1.00	*M*= 1.94 SD= 1.376 IQR= 2 Mdn= 2.00	*M*= 1.94 SD= 1.376 IQR= 2 Mdn= 2.00	*M*= 2.89 SD= 1.958 IQR= 3 Mdn= 3.00
Relative clause	*U*=711.000; *z*= -3.058; *p*= .002; *r*= .31			
	M= .89 SD= .970 IQR= 2 Mdn= 1.00	*M*= 1.74 SD= 1.440 IQR= 1 Mdn= 1.00		
Non-finite -ed subordinate clause			*U*= 963.000; *z*= -2.177; *p*= .029; *r*= .22	
			M= .08 SD= .274 IQR= 0 Mdn= .00	*M*= .28 SD= .544 IQR= 0 Mdn= .00

Pre- and postmodified NPs

The results of the Kruskall-Wallis tests showed differences regarding the use of simple premodification and a simple PP (*n*= 140; *H*(2)= 25.150, *p*≤ .05), simple premodification and a multiple PP (*n*= 140; *H*(2)= 14.753, *p*= .001), and simple premodification and a relative clause (*n*= 140; *H*(2)= 27.092, *p*≤ .05).

Table 6 reveals that differences in the frequency of use of NPs with pre- and postmodification are only found between B1 and B2. When simple pre- and postmodification in the NP is analysed, only the use of an NP with simple premodification and a simple PP (9) shows statistically significant differences between both levels.

(9) The best option for you (9453)

In the case of simple premodification and multiple postmodification, three NP complexity types show statistically significant differences between B1 and B2, namely the use of simple premodification and: a) a relative clause (10); b) a comparative clause (11); and d) a multiple PP (12).

(10) better representatives who make (900006)

(11) at the same time that they are studying (9287)

(12) the big disadvantages of living in the rural area (70045)

The more frequent use of PPs (either simple or multiple) in pre- and postmodified NPs is, therefore, in line with the results obtained in postmodified NPs, in which the most frequent use of PPs by B2 learners was also found to characterize B2 NP complexity in L1 Spanish EFL argumentative writing. Likewise, the more frequent use of relative clauses in pre- and postmodified NPs coincides with the more frequent use of relative clauses at B2 in NPs which are only postmodified.

Since there are no statistically significant differences, B2 and C1 learners may be claimed to use these NP complexity types with a similar frequency when writing their texts.

Table 6. *Simple premodification and simple postmodification; simple premodification and multiple postmodification: criterial NP complexity types*

	SIMPLE PREMODIFICATION AND SIMPLE POSTMODIFICATION			
	B1	B2	B2	C1
Simple premodification and prepositional phrase	*U*=684.500; *z*= -3.525; *p*= .000; *r*= .36			
	M= .30 *SD*= .462 *IQR*= 1 *Mdn*= .00	*M*= .92 *SD*= 1.047 *IQR*= 1 *Mdn*= 1.00		
	SIMPLE PREMODIFICATION AND MULTIPLE POSTMODIFICATION			
	B1	B2	B2	C1
Simple premodification and multiple prepositional phrase	*U*= 744.000; *z*= -2.951; *p*= .003; *r*= .30			
	M= .45 *SD*= .730 *IQR*= 0 *Mdn*= .00	*M*= 1.06 *SD*= 1.114 *IQR*= 2 *Mdn*= 1.00		
SImple premodification and relative clause	*U*= 527.000; *z*= -5.306; *p*= .000; *r*= .55			
	M= .05 *SD*= .211 *IQR*= 0 *Mdn*= .00	*M*= .72 *SD*= .757 *IQR*= 0 *Mdn*= 1.00		

6. Discussion

NP complexity in argumentative writing by L1 Spanish EFL students at the CEFR B1, B2 and C1 levels has been studied using corpus-driven fine-grained NP complexity types to analyse: a) the variety of NP complexity types employed at each level (RQ1); and b) their frequency, identifying criterial features, i.e. statistically significant differences found, the use of NP complexity types at the three levels (RQ2).

B1 learners have been found to use a more limited variety of NP complexity types in their argumentative writing than their B2

and C_1 counterparts (RQ1). There is an important increase in the number of NP complexity types employed by students at the B_2 level, which remains stable at the C_1 level. At B_1, NP complexity types are limited, as students do not employ some simple postmodification NP types (use of apposition or pronouns) and other multiple postmodification types, such as multiple phrases (multiple PPs, multiple AdjPs), or clausal structures, such as comparative clauses, that-subordinate clauses, or non-finite subordinate clauses (to-infinitive, or -ed clauses). NP complexity development from B_1 to B_2, therefore, entails B_2 students' use of those modifiers in the NP, which results in a similar complexification of the NP to that shown by C_1 students. The consideration of these results together with those by Díez-Bedmar & Pérez-Paredes (2020) point to the increase in the number of NP complexity types as a characteristic of learner writing from A_2 to B_1 (Díez-Bedmar & Pérez-Paredes, 2020) and from B_1 to B_2, as shown in this paper. From B_2 onwards, there may be a ceiling effect regarding the number of NP complexity types which can be employed in argumentative writing. A Contrastive Interlanguage Analysis with L_1 data would be needed to confirm this hypothesis.

NP complexity development in argumentative writing has also been analysed by considering the criterial features found in students' use of NP complexity types (RQ2). The results show that, apart from the increase in the use of bare NPs across B_1, B_2 and C_1, NP complexity development across these three CEFR levels can be seen in the progressively more frequent use of three NP complexity groups, namely NPs with multiple premodification, NPs with simple postmodification and NPs with multiple postmodification.

Regarding premodification, previous research has highlighted the relation between the use of noun modifiers and a higher proficiency level (see Ansarifar et al., 2018; Lan & Sun, 2019; Parkinson & Musgrave, 2014; Sarte & Gnevsheva, 2022), even though some other publications also report an increase in the use of adjective modifiers (Casal & Lee, 2019; Lan & Sun, 2019, Lan et al., 2019). In this paper no distinction was made between the use of a noun or an adjective to premodify the head of the NP. Both cases of

premodification were classified as simple premodification (since the premodification is realized by a single word). A distinction was made, however, between simple and multiple premodification. The data in in this study show that the use of simple premodification only increases from B1 to B2. However, multiple premodification use (that realized by more than one word) constantly increases with CEFR level, which points to the higher degree of complexity of premodified NPs by students at B2 and C1. This complexity can be particularly seen in the degree of embeddedness or in the use of coordinated premodifiers. The more frequent use of multiple premodification in the higher levels found in this paper is in line with the results in Lahuerta Martínez (2023) and Diez-Bedmar & Pérez-Paredes (2020). Lahuerta Martínez (2023) observed an increase in multiple premodification (by means of the combination adjective and noun to premodify the head of the NP) in the higher proficiency students, and Díez-Bedmar & Pérez-Paredes (2020) reported a statistical increase in the use of multiple premodification at the end of secondary education (B1 level). Multiple premodification of NPs may then be considered a criterial feature not only at the CEFR B2 and C1 levels, but also at B1 level.

The analysis of postmodification points to the importance of PPs, either simple or multiple, in NP complexity development across the three CEFR levels analysed. Their frequency increases significantly from one level to the next. This result coincides with previous research which also identified the more frequent use of PPs as a characteristic of higher proficiency students (Casal & Lee, 2019; Lahuerta Martínez, 2023; Lan & Sun, 2019: Parkinson & Musgrave, 2014). Apart from this developmental result, two specific postmodification complexity types are found to be criterial at the CEFR B2 level, namely the use of comparative phrases and of relative clauses, and in the case of the CEFR C1 level, the use of non-finite -ed subordinate clauses.

The more frequent use of relative clauses to postmodify NPs by students at higher levels had already been pointed out in studies which also employed fine-grained measures of syntactic complexity

(Lan & Sun, 2019). The increase in the use of comparative phrases, however, had not been reported in the literature, which may stem from the fact that this noun modifier is not included in Biber et al.'s (2011) list and, therefore, is not analysed when using those fine-grained indices. Another reason may be the effect that the topic (Lan & Sun, 2019; Lan et al., 2019; Sarte & Gnevsheva, 2022) or the text type may have had on NP complexity. Further studies with different text types, topics and a non-restricted list of fine-grained NP complexity indices would be needed to clarify the role of comparative phrases in NP complexity development. The last criterial feature regarding postmodification in this paper, i.e. the use of non-finite -ed subordinate clauses, also coincides with previous studies which also found an increase of different non-finite subordinate clauses in more proficient learners (Bao, 2024; Lahuerta Martínez, 2023).

Students at B2 also increase their use of NPs with simple premodification and simple or multiple postmodification. In these cases, PPs (either simple or complex) play a crucial role, as they are involved in two NP complexity types which are criterial at B2. Likewise, relative clauses are present in another NP complexity type which is criterial at B2 in pre- and postmodified NPs. These results highlight the importance of the use of PPs and relative clauses either in postmodified NPs or in pre- and postmodified NPs in the characterization of NP complexity at higher levels. The increase of pre- and postmodified NPs is important at the B2 level, as no statistically significant differences in their use are found at lower levels (see Díez-Bedmar & Pérez-Paredes, 2020) and it is at B2 (and C1) when students use them more, thus increasing the variety of NP complexity types they produce.

7. Conclusions

This paper has analysed NP complexity in argumentative writing by L1 Spanish EFL learners at the CEFR B1, B2 and C1 levels by considering corpus-driven fine-grained NP complexity types. The

results obtained contribute to the existing literature on NP complexity in different ways.

CEFR levels were used as an indicator of the students' language proficiency level in the foreign language. As stated in the methodology, all the texts in the FineDesc Learner Corpus had been evaluated by two independent CEFR-expert raters, a process which validated the text classification into CEFR levels. This methodological decision circumvented the limitations found in other text classifications in learner corpora (students' institutional status, scores obtained in previously-taken standardized tests) and ensured the comparability of the results offered in this paper with those which also employ CEFR levels to classify and analyse learner language either cross-sectionally or longitudinally.

This study provides a corpus-driven list of fine-grained NP complexity types employed by L1 Spanish EFL learners at the CEFR B1, B2 and C1 levels in argumentative writing, which may be employed as fine-grained complexity indices in future studies. Manually analysing all the NP complexity types in the learner corpus produced the resulting list of NP complexity types per level. Although some NP complexity types had already been used in the literature, others (e.g. the use of comparative phrases) had not despite their importance in describing NP complexity at B2 in L1 Spanish EFL argumentative writing. The difference in the number of NP complexity types found in different learner corpora (descriptive writing in Díez-Bedmar & Pérez-Paredes, 2020 and argumentative writing in this study) highlights the need to consider the students' CEFR level and text type and topic in the identification of NP complexity types in learner writing.

The results in this paper show that CEFR B2 learner argumentative writing may be considered a turning point in NP complexity development regarding the variety and the frequency of NP complexity types employed. Both aspects of complexity (Bulté & Housen, 2014; De Clercq & Housen, 2017; Lu, 2011; Ortega, 2003; Wolfe-Quintero et al., 1998) show a major increase at the CEFR B2

level to then remain similar at C1. B2 learners, therefore, are able to increase the variety of NP complexity types. On some occasions, this increase is a necessary step in NP complexity development towards a posterior increase of the same NP complexity type at C1 level, whereas in other cases the increase found at B2 already mirrors the frequency of use by CEFR C1 level students.

The analysis of the NP complexity types which are criterial at the higher levels has revealed that more proficient students do not employ more frequently NP complexity types which may be considered much more complex (e.g. NPs with multiple premodification and multiple postmodification). A Contrastive Interlanguage Analysis would be necessary to compare the variety and frequency of NP complexity types produced in argumentative writing with similar topics by EFL learners at different levels and speakers of the reference variety and, therefore, detect if there is any NP complexity type which may characterize learner argumentative writing (at a specific CEFR level) or L1 English argumentative writing.

There are some limitations in this study. First, the time and effort invested in the exhaustive manual annotation of the texts (see also Ansarifar et al., 2018; Kyle & Crossley, 2018; Lu, 2011) prevented the analysis of a larger number of NPs per CEFR level. Second, only three CEFR levels, B1, B2 and C1, were analysed in one text type. Further research is therefore needed to analyse NP complexity in other text types, when writing on different topics, with learner productions by students with other L1s and at different CEFR levels to reach a more comprehensive understanding of NP complexity and uncover the effect that such variables may have on NP complexity. Learner corpora with texts which have been reliably classified into the different CEFR levels would also be necessary so that the results obtained can be comparable and may inform the NP complexity literature in the best possible way.

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Appendix A. NP complexity taxonomy in this study

Premodification	
Simple premodification	(simp_prem) Economic independence (9299)
Multiple premodification	(mult_prem) Historically relevant buildings (70038)
Postmodification	

Simple postmodification	Pronoun And (simp_post_pron) the city itself (600015)
	Adverb phrase (simp_post_advP) Cultural life there is better (70027)
	Prepositional phrase (simp_post_PP) The results of the exams (9286)
	Apposition (simp_post_app) The president, Franklin D.Roosevelt (900023)
	Prepositional phrase – Apposition (simp_post_PPApp) Places like museums (70051)
	Comparative phrase (simp_post_compP) Less variety than in the city (70068)
Multiple postmodification	Multiple prepositional phase (mult_post_multPP) remodelations of old buildings (600001)
	Multiple adjective phrase (mult_post_multadjP) other methods more updated (10141)
	Relative clause (mult_post_relcl) Many children who live in… (70043)
	That-clause (mult_post_thatcl) the idea that each employee (9529)
	Comparative clause (mult_post_compcl) The same as removing the influence (900011)
	Non-finite –ing clause (mult_post_nfingcl) people willing to learn (900006)
	Non-finite to-infinitive clause (mult_post_nftoinfcl) Time to enjoy these years (900023)
	Non-finite –ed clause (mult_post_nfedcl) A society prepared to this (900003)
	Multiple phrase as an apposition (mult_post_multiplePApp) Education, the most important value (900006)

Premodification and postmodification	
Simple premodification and postmodification	Simple premodification and an adverb phrase (simp_prem_simp_post_advP) Cultural life there is… (70027)
	Simple premodification and a prepositional phrase (simp_prem_simp_post_PP) The best option for you (9453)
	Ssimple premodification and a comparative phrase (simp_prem_simp_post_compP) More negative points than positives (6223)
	Simple premodification and an apposition realized by a prepositional phrase (simp_prem_simp_post_PPapp) other cultural lifestyle, like live in a big city (70071)
	Simple premodification and an apposition (simp_prem_simp_post_app) The health sector, hospitals… (70036)
Multiple premodification and simple postmodification	Multiple premodification and a prepositional phrase (mult_prem_simp_post_PP) some important and personal objects for me (50031)
	Multiple premodification and an apposition, realized by a prepositional phrase (mult_prem_simp_post_PPapp) from the daily-life necesities, such as schools (70026)
simple premodification and multiple postmodification	Simple premodification and a relative clause (simp_prem_mult_post_relcl) better representatives who make (900006)
	Simple premodification and a multiple prepositional phrase (simp_prem_mult_post_multPP) the big disadvantages of living in the rural area (70045)
	Simple premodification and a comparative clause (simp_prem_mult_post_compcl) at the same time that they are studying (9287)
	Simple premodification and a that-clause (simp_prem_mult_post_thatcl) a well-known fact that the rural world (70026)
	Simple premodification and a non-finite –ing clause (simp_prem_mult_post_nfingcl) some political parties supporting these ideas (900016)
	Simple premodification and a non-finite to-infinitive clause

	(simp_prem_mult_post_nftoinfcl) An excellent way to work (900023)
	Simple premodification and a non-finite –ed clause (simp_prem_mult_post_nfedcl) this stunning building designed by Gaudi (600005)
	Simple premodification and two different postmodification structures (simp_prem_mult_post_twostruct) The second model of working, one project per team (900024)
multiple premodification and postmodification	Multiple premodification and a relative clause (mult_prem_mult_post_relcl) artistic, historical or academic places where you learn more (70067)
	Multiple premodification and a multiple prepositional phase (mult_prem_mult_post_multPP) free and critical instruction according to the current needs (900009)
	Multiple premodification and a multiple adjective phrase (mult_prem_mult_post_multadjP) gigantic and many times souless cities full of vehicles and stores (70074)
	Multiple premodification and a non-finite to-infinitive clause (mult_prem_mult_post_nftoinfcl) a pros and cons list to see which place adapts better (70072)
	Multiple premodification and a non-finite –ed clause (mult_prem_mult_post_nfedcl) The new modern world born from the industrial revolution (600016)
	Multiple premodification and a comparative clause (mult_prem_mult_post_compcl) the same free time that if you only study (9298)