Noun Modification Across Different Registers

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Preddiplomski studij engleskoga jezika i književnosti
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Modifikacija imenica u različitim registrima

Završni rad

Mentor: doc. dr. sc. Dubravka Vidaković Erdeljić

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IZJAVA

Izjavljujem s punom materijalnom i moralnom odgovornošću da sam ovaj rad samostalno napisao/napisala te da u njemu nema kopiranih ili prepisanih dijelova teksta tuđih radova, a da nisu označeni kao citati s navođenjem izvora odakle su preneseni.

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Abstract

The present paper deals with the topic of noun modification across different registers. The paper first presents some general information on registers, noun phrases and their modification, and then focuses on how nouns are modified in specific registers in order to provide the reader with the necessary information to understand the research part of the paper. The aim of the paper is to determine whether there are differences in the structure of noun phrases across different registers, specifically academic writing, newspaper prose and conversation. Based on previous research done by Biber (2009) we test the following hypotheses: more complex noun phrases can be found in academic writing and newspaper prose than in conversational register, nouns are more often post-modified in academic writing and newspaper prose than they are in conversation, and adjectives are more often found as premodifiers in conversation than they are in academic writing and newspaper prose. The research is based on the analysis of corpora with the use of the Sketch Engine tool. After conducting it and analyzing the data, it was found that only the first hypothesis is true for our corpora, conversational registers feature less complex noun phrases than academic writing and newspaper prose, but nouns are more often post-modified in conversations than they are in the other two registers, and adjectives are found not to be more frequent in conversation than in the other two registers, which could be due to the fact that the conversation corpus features all spoken texts, and not exclusively conversation.

Key words: noun modification, registers, academic writing, newspaper prose, conversation

1. Introduction

Language has been evolving for centuries so it is no wonder that there is a notion of registers. Certain areas demand a different usage of language so there are multiple registers which all have their unique features. These differences and similarities across registers can be observed by noting down the ways word classes are used – some registers will rely more on noun phrases and will avoid verbs, while other registers may heavily rely on verbs and their ability to express tense, aspect and modality. Therefore, this paper will focus on three registers and how noun phrases are premodified and postmodified in them. The first register is academic writing which is usually known for its more formal style and longer sentences (Biber and Gray 2016: 88). The second register is newspaper prose which can be characterized by including more narration in its texts and using more phrasal modifiers than clausal (Biber and Gray 2016: 110). The last register is conversation, i.e. conversational English in which interlocutors usually avoid long sentences so it can be expected of this paper to prove that there are not a lot of modified noun phrases and instead, shorter noun phrases are used more frequently (Biber and Gray 2016: 88). Thus, the aim of this paper is to first explore the ways nouns are modified and used in these three registers and then confirm or deny those findings through research which was done using the Sketch Engine tool online. The corpora which are used for the research are the ones already available on Sketch Engine, with the exception of a self-made corpus for academic writing.

The paper is divided into sections – it begins with a section on registers, and moves onto noun modifications, then comments on the relationship between registers and noun phrases. After all necessary information is given, there is a section on methodology, followed by the presentation of the research and its results. The paper concludes with the interpretation and discussion of the results.

2. Registers

Biber and Conrad (2019: 5-6) maintain that registers can be identified based on the analysis of complete texts or a collection of text excerpts and have defined complete text as "an instance of extended discourse that has a clear start and finish, such as a research article or a sermon", but have noted that many of texts used in research are just "segments of discourse extracted from a larger complete text". The analysis requires identification of pervasive linguistic features in the variety – register features. Biber and Conrad (2019: 54) have defined register features as "words or grammatical characteristics that are pervasive (distributed throughout a text from the register), and frequent (occurring more commonly in the target register than in most comparison registers)".

Also, to complete a registers analysis, the relationship between linguistic and situational features must be interpreted. The term *situational features* refers to the situational context of use, including communicative purposes, for example if the text is produced in speech or writing. On the other hand, the term *linguistic features* refers to the linguistic analysis of the words and structures that commonly occur in the register, for example how many times passive verbs are used in a text (Biber and Conrad 2019: 8). Furthermore, Biber and Conrad suggest that a register is easier to identify if an analysis contrasts two different registers.

> "For example, in contrast to the speakers in a conversation, the author of a news report is not addressing a specific person, and there is no direct interaction between a specific reader and the author... The characteristics of any individual register become much more apparent when it is compared to other registers." (Biber and Conrad 2019: 8).

Also, it is important to note that linguistic differences among registers are not arbitrary and that register analyses include description of the situational context and functional interpretation of why those specific linguistic features commonly occur in that context (Biber and Conrad 2019: 10).

Biber and Conrad (2019) further argue that a register can be something general, like a textbook, or it can be narrowed down to a textbook in linguistics adding that that "there is no single correct level on which to identify a register" (Biber and Conrad 2009: 10).

In the following subsection we discuss the features of three registers – academic prose, news and conversation – that will be in the focus of our study.

2.1. Academic prose

Every register has specific features which differentiate it from other registers. When it comes to academic prose, Biber and Conrad (2019: 113–115) list the following situational features of academic prose:

1. singular or plural and sometimes institutional addressor,
2. often written by an adult trained professional, but it varies with sub-register,
3. the addressee is a group,
4. there is no direct interaction among the previous three participants,
5. social roles vary among the participants,
6. there is no personal relationship among the participants,
7. mode is writing and it can be printed and/or online,
8. often requires careful reading to comprehend fully,
9. place of communication is public, i.e. available for others to view,
10. communicative purpose is informative, explanatory and/or persuasive,
11. it is factual with interpretation.

Furthermore, Biber and Conrad (2019: 117) provided an overview of typical register features of newspaper prose and academic prose, and they say that nominal features, specifically modifications of noun phrases, are one of the most obvious ways in which the two written registers differ from conversation, and this is because conversations contain less modified noun phrases than newspaper and academic prose. However, for conversation they contend that "personal pronouns and most verb phrase features (e.g., present tense and modal verbs) are more common in conversation than in written registers" (Biber and Conrad 2019: 117).

Some of the register features of academic prose they have listed are the following (Biber and Conrad 2019: 118):

1. nouns are very common,
2. nominalizations are extremely common, especially those with the suffix *-tion*,
3. prepositional phrases after nouns are extremely common,
4. nouns as premodifiers of nouns are common,
5. personal pronouns are rare,
6. present tense is more common than in news, and far more common than past tense,
7. past tense is rare,
8. modals are uncommon,

9. passives are more common than in news,

10. time and place adverbials are rare,

11. linking adverbials are very common,

12. questions are rare,

13. and sentence structure is standard syntax.

Besides the features listed by Biber and Conrad (2019), Biber and Gray (2016: 14) have noted that the general perception of academic writing is that it is "more complex, structurally elaborated, and explicit in meaning than most other spoken and written registers". However, they put this perception down to people believing complexity is linked with the use of modifiers and additions to simple clauses and phrases. Furthermore, they maintain that this way of thinking leads to some unusual conclusions when texts from other registers are considered and have proven this statement by giving examples of conversation sentences which proved to have more embedded clauses than academic writing (Biber and Gray 2016: 16). They argue that academic writing is not grammatically complex because of dependent clauses, but because of information being expressed through the use of phrases and the abundance of modifiers (Biber and Gray 2016: 18).

2.2. Newspaper prose

The second written register which will be included in the research part of this paper is newspaper prose. When discussing written texts Biber and Conrad (2019: 143) suggest that they "are more permanent than spoken texts, and easier to distribute to a wide audience. Further, the production circumstances of writing enable the author to revise and edit the text, so that it effectively communicates the intended content". These features of written text are quite important for newspapers because, as all registers, newspapers have certain linguistic rules which need to be followed.

Biber and Conrad (2019: 113-115) have first listed situational characteristics of newspaper prose and some of them are: the addressor may be single, plural, institutional or unidentified, and the author/addressor is often an adult journalist; the addressee is a group; there is no direct interaction or personal relationship between the author and the addressee; the mode is writing and it can be printed or in electronic format; expected time of reading the text is the same day it was produced, and so on.

Furthermore, Biber and Conrad (2019: 118) have listed register features of newspaper prose, and they are as follows:

1. nouns are very common,
2. nominalizations are common,
3. prepositional phrases after nouns are common,
4. attributive adjectives are common,
5. nouns as premodifiers of nouns are extremely common,
6. personal pronouns are slightly more common than in academic prose, but still uncommon,
7. present tense is less common than in academic prose,
8. past tense is much more frequent than in academic prose,
9. modals are uncommon, but slightly less common that in academic prose,
10. passives make up about fifteen percent of all finite verbs,
11. adverbials of time are most common, but of place are also common,
12. linking adverbials are rare,
13. the syntax is standard,
14. and questions are rare.

2.3. Conversation

Biber and Conrad (2019: 23) maintain that face-to-face conversation requires "direct interaction between at least two people who are together at the same time in the same place".

The situational features as listed by Biber and Conrad (2019: 7) are as follows: face-to-face conversation requires direct interaction between at least two people who are together at the same time in the same place; both participants must speak; it is generally appropriate for participants to discuss events, thoughts, and opinions related to their personal lives or something in the immediate context.

The register features of conversation according to Biber and Conrad (2019: 23) are the following:

1. nouns are less common,
2. nominalizations are rare,
3. prepositional phrases after nouns are less common,
4. attributive adjectives are less common,
5. nouns as premodifiers of nouns are rare,

6. personal pronouns are extremely common,

7. present tense is very common,

8. past tense is uncommon, modals are more common than in news or academic prose,

9. passives are rare,

10. time and place adverbials are common,

11. there are many fractured clauses and incomplete utterances.

3. Noun phrases and their modifications

Noun phrases consist of a noun, a determiner and optionally a modifier (Mutiara 2019: 18). Modifiers can occur before the head noun, in which case they are called pre-modifiers, or they can occur after the head noun and they are called post-modifiers (Biber et al. 2008: 182). The prototypical noun phrase can be divided into the following elements: limiter, determiner, premodifier, head and postmodifier (Gómez 2009: 17). Biber et al. (2008: 182-183) contend that pre-modifiers are phrasal and that there are three major structural types of pre-modifiers: attributive adjectives, participial adjectives, and nouns. On the other hand, they say that post-modifiers can be clausal (finite relative clauses, to-clauses) or phrasal (prepositional phrases and appositive noun phrases). For finite relative clauses they gave the following sentence as an example: "the penny-pinching circumstances *that surrounded this international event*", for ing-clauses: "the imperious man *standing under the lamppost*", for ed-clauses: "a stationary element *held in position by the outer casting*", and for to-clauses: "the person *to see*" (Biber et al., 2008: 183). Biber et al. (2008: 183) have also exemplified appositive noun phrases that function as post-modifiers: "the Environment Secretary, *Mr. Chris Patten*", and prepositional phrases: "compensation *for emotional damage*".

Furthermore, an important notion related to noun modification which needs to be defined is the difference between compressed structure versus elaborated structure. Elaborated structures are the clausal ones (relative clauses, ing-clauses and ed-clauses) and they all contain verbs. The reason they are called elaborated is because their structure elaborates the grammatical relationship between the head noun and the modifier. Compressed structures are phrasal and they include attributive adjective and prepositional phrases, or in other words, they are just phrases and therefore lack verbs (Hutter 2015: 11).

3.1. Pre-modification of nouns

As Gómez (2009: 22) argues, premodifiers are optional elements of a noun phrase, but their presence must not affect the grammaticality of the structure. There are three types of noun pre-modifiers and those are attributive adjectives, participial adjectives, and nouns – they are all phrasal types of modifications. In the light of our hypotheses it is very interesting to note that compared to the earlier centuries, texts nowadays are constructed in a different way, and they rely on phrasal devices rather than dependent clause structures (Biber and Gray 2016: 170).

3.1.1. Nouns as pre-modifiers of nouns

As demonstrated by (Biber and Gray 2016: 168), pre-modifying nouns were rare in the seventeenth, eighteenth and the nineteenth century, but then their use rapidly increased in the twentieth century. Biber and Gray (2016: 170-179) described five factors related to functions of pre-modifying nouns, more precisely, they tried to explain why pre-modifying nouns became so frequent in texts. The first factor is that pre-modifying nouns are used as an alternative to 's genitive and of-genitive phrases. They used various articles from several registers to prove this factor and have shown that nouns can paraphrase either 's genitive or of-genitive phrase.

The second factor refers to the semantic classes of nouns used as pre-modifiers, i.e. it refers to the functions nouns had in the earlier centuries – "expressing meanings related to three general semantic categories: title nouns, place/location nouns, and concrete/tangible nouns" (Biber and Gray 2016: 174). As time went on, nouns were more commonly used to pre-modify even more notions – institutions, states or conditions, and other intangibles. With these constant changes throughout the centuries, "by the end of the twentieth century, almost any noun could be used freely as a pre-modifier of another head noun" (Biber and Gray 2016: 175).

The third factor refers to nominalizations as pre-modifiers. Biber and Gray (2016: 176) argue that nominalizations can be used both as pre-modifiers or as head nouns, but that pre-modifying nominalizations usually refer to processes or activities and that they are derived from verbs through either morphological derivations or through conversion.

The fourth factor relates to sequences of multiple pre-modifying nouns which began to appear in the late nineteenth and the early twentieth century, and are now quite common, with sequences consisting of up to three pre-modifying nouns and the head noun (Biber and Gray 2016: 176-177).

The last factor of why pre-modifying nouns became more commonly used in texts pertains to the meaning relationships between the pre-modifying noun and the head noun. When it comes to title and place nouns, the meaning connection is obvious, e.g. "*Captain Smith* is a person named Smith who is a captain" (Biber and Gray 2016: 178). Biber and Gray (2016) focus more on explaining the possible meaning relationships because the range of pre-modifying nouns has expanded greatly since the eighteenth century when people used only title and place nouns to pre-modify another noun.

"In many cases, the pre-modifying noun is the semantic patient or theme of the process described by the nominalized head noun… In other cases, the pre-modifying noun identifies the purpose or topical domain of the process described by the nominalized or noun-converted head noun" (Biber and Gray 2016: 179).

3.1.2. Attributive and participial adjectives as pre-modifiers of nouns

Unlike nouns which were not used very frequently as pre-modifiers of other nouns in the seventeenth and the eighteenth century, attributive adjectives were already used commonly in the seventeenth century (Biber and Gray 2016: 184). They are divided into two semantic categories: descriptors and classifiers.

"Descriptors are prototypical adjectives describing attributes of the head noun, including physical characteristics, evaluations, and emotional states… In contrast, adjectives functioning as classifiers delimit or restrict the reference of the head noun, identifying the category of the noun" (Biber and Gray 2016: 184-185).

Descriptive adjectives (e.g. *sleepy* cat), or descriptors, should precede classifiers (e.g. *final* episode), and nouns (e.g. *sea* level) as premodifiers follow other premodifiers.

Besides attributive adjectives, participial adjectives, -ed (e.g. *self-made* millionaire) and -ing (e.g. *smiling* man) participles, may also act as pre-modifiers, but "participial adjectives are comparatively rare, while simple attributive adjectives are very frequent" (Biber et al. 2008: 183). Furthermore, there is a specific subclassification of how adjectives should be ordered in a phrase: general, age, color, participle, provenance, noun, denominal (Gómez 2009: 18).

3.2. Post-modification of nouns

The head of the NP is the most important element of the NP and the post-modifiers are placed after it; they are prototypically prepositional phrases and relative clauses, but can also be adjective phrases and noun phrases (Gómez 2009: 18). Biber et al. (2008: 183) divide post-modifiers in the following way: clausal post-modifiers are relative clauses, ing-clauses, ed-clause and to-clauses, while phrasal post-modifiers are prepositional phrases and appositive noun phrases.

Also, there are certain rules when it comes to the position of noun phrases with post-modifiers. As Gomez (2009) explains "they are preferred in sentence final position and are avoided in non-final

positions. In subject position, the postmodifying clause is extraposed, leaving the remainder of the subject noun phrase in sentence initial position" (Gómez 2009: 30).

3.2.1. Prepositional phrases as post-modifiers of nouns

Gómez (2009: 31) claims that prepositional phrases are the most common type of post-modifiers, the *of*-phrase being the most frequent one. Biber and Gray (2016: 190) maintain something similar – they argue that there was a decline in frequency for finite relative clauses and *of*-genitive phrases in academic prose over the last century, while the prepositional phrases, especially those headed by *in*, *on* and *for*, have increased in frequency. Furthermore, Biber and Gray (2016: 191) claim that "six other prepositions (in addition to *in* and *for*) occur with moderately high frequencies heading post-nominal phrases in modern academic prose: *about, between, from, on, to* and *with.*"

With the increased frequency of prepositional phrases being used as post-modifiers of nouns, their functions and meanings have also expanded. Some of those are concrete locative meanings, and abstract meaning (Biber and Gray 2016: 192). In the seventeenth and the eighteenth century, prepositional phrases were more commonly used with concrete locative meaning, while abstract meanings were uncommon, and "abstract meanings with *on* were especially rare, restricted to an identification of 'topic'" (Biber and Gray 2016: 194).

Also, with the 'evolution' of the use of prepositional phrases, some prepositional heads have developed specialized abstract functions "that mark the modifying noun as the semantic 'patient' of the process described by the head noun" (Biber and Gray 2016: 196) and an example of this are prepositions *in* and *on*: "an increase in efficiency", "influence on dropout rates" (Biber and Gray 2016: 196). There are specific head nouns which allow this function of prepositional phrases and some of those are "change, decrease, difference, fall, increase, rise, and variation" (Biber and Gray 2016: 197).

Besides having a nominal part in the prepositional phrase, all prepositions have been increasingly occurring with an *-ing* clause as their complements, and these structures actually express a process, while also retaining the clausal constituent in the *-ing* clause, for example "errors in rounding the total score" (Biber and Gray 2016: 198).

3.2.2. Appositive noun phrases as post-modifiers of nouns

This structure usually consists of two noun phrases which are separated by a comma (Biber and Gray 2016: 119). Appositive noun phrases, also called nominal appositions, were rare in the eighteenth and the nineteenth century, but have become common in the twentieth century. However, this development has been restricted to informational written registers (Biber and Gray 2011: 233). In newspaper prose, appositive noun phrases are not uncommon, while in conversational discourse they are less common and used as clarification of meaning of the noun phrase (Biber and Gray 2016: 202–203). Also, in conversational discourse appositive phrases are more like 'prefaces' or 'tags' and are usually placed at the beginning or end of a clause instead of being placed within the clause, for example "That little shop – it's great" (Biber and Gray 2016: 203). On the other hand, appositive noun phrases modify the head noun in such a way that the whole phrase structure is embedded in a clause (Biber and Gray 2016: 203).

Just like prepositional phrases, appositive noun phrases have also expanded their functions when compared to the previous centuries. While in the eighteenth century appositive structures were used mostly to refer to the title and positions of a person, in the nineteenth century appositive noun phrases became a way to give better description of nouns. Moreover, in the nineteenth century appositive noun phrases were marked by parentheses – they were separated from the text that way, instead of separating them with commas (Biber and Gray 2016: 204).

3.2.3. Finite and non-finite relative clauses as post-modifiers of nouns

Finite relative clauses are introduced by either a relative pronoun – *who*, *which*, *whom*, *whose*, by *that* or by Ø (Berlage 2014: 49), while non-finite clauses contain -ed and -ing participles or are infinitive to-clauses (Lau 2017: 80). Finite relative clauses provide the most elaborate grammatical information because they contain a finite verb phrase which expresses tense, aspect, voice and modality. Also, the main verb of the phrase expresses a certain meaning relationship between the head noun and the other constituents of the relative clause. On the other hand, non-finite relative clauses omit the expression of tense/modality (Biber and Gray 2016: 232).

Biber et al. (2009: 183) list three types of finite relative clauses and those are: restrictive *that*-relative clauses, restrictive *wh*-relative clauses and non-restrictive *wh*-relative clauses. Furthermore, non-finite relative clauses can be transformed into finite relative clauses without having their meaning changed (Berlage 2014: 16).

4. Relationship between noun phrases and registers

The previous sections of this paper focused on how noun phrases can be pre-modified and post-modified, and some features of specific types of modification were given. This section provides insight on how noun phrases are modified in three registers – newspaper prose, academic writing and conversational register.

When it comes to academic writing, Hutter (2015: 5) contends that nouns and complex noun phrases are important in academic writing because of their prevalence, challenge to learners and their power in texts. Also, Hutter (2015: 6) argues that nouns are much more common in academic writing than in other registers and that "nouns in academic writing also more often feature noun modification, which lengthens the noun phrases and increases their grammatical complexity compared to unmodified noun phrases" (Hutter 2015:6). She later explains that noun phrases are often long and stacked with modifiers because of informational density which is a characteristic of academic writing (Hutter 2015: 10).

However, there are also some issues concerning noun phrases and those are syntactic ambiguity and lexical density which Hutter (2015:6) defined as follows: "Syntactic ambiguity is the lack of clarity that arises when grammatical relationships are not explicit… Lexical density is the high count of lexical words compared to function words in a phrase or clause". Hutter (2015: 7) further explains that noun phrases have such importance in academic writing because of their power, i.e. she explains that they have elasticity, or in other words, they can contain a lot semantically and can be structurally stretched with modifiers. She then explains that "noun phrases can occupy many different positions and therefore direct the flow of given/new information" (Hutter 2015: 7). This ability of noun phrases to structure the way information is given is important for authors because they can emphasize certain elements and topics in their writing (Hutter 2015: 7).

Furthermore, academic research writing often achieves dense information structure with few verbs by incorporating sequences of prepositional phrases as noun modifiers (Biber and Gray 2016: 192). Also, as it was mentioned before, prepositional phrases as nominal post-modifiers have increased in frequency which led to an expansion in their functions and meanings. In today's academic prose, the prepositions *in* and *on* can express both concrete locative meanings and abstract meanings, but the expression of abstract meaning with prepositional phrases is restricted primarily to writing. On the other hand, in conversational registers, prepositional phrases used as noun modifiers express concrete/locative meanings. (Biber and Gray 2016: 193).

Additionally, classifier (e.g. *classical* music) and descriptor (e.g. *tall* woman) adjectives are also used differently in academic writing and conversational register – conversational register uses descriptors to a much greater extent than classifiers, while academic prose, but also newspaper prose tend to use classifiers more often than descriptors (Biber and Gray 2016: 185-186). Moreover, appositive noun phrases are extremely rare in conversation, but very common in academic writing (Biber and Gray 2016: 202). Also, separating the appositive noun phrase via parentheses instead of commas is restricted almost exclusively to academic writing. On the other hand, newspaper prose uses appositive noun phrases, but still uses the traditional structure – noun phrases are separated by a comma (Biber and Gray 2011: 233). In addition to that, today's newspaper prose uses appositive noun phrase in order to achieve the co-referential meaning, while academic writing has a wider range of functions for the apposition, which results in those phrases being more complex and thus, being separated by parentheses (Biber and Gray 2016: 205).

When it comes to conversational register versus newspaper prose, Gómez (2009: 122) comments on the previous research done by Crystal and Davy in 1973 and notes that there are more complex pre- and post-modifications of nouns in newspaper prose than there are in everyday speech. She also notes that pre-modifiers are used more commonly in newspaper prose in order to achieve better descriptions in the articles.

Furthermore, Biber and Gray (2016:99) claim that "noun complement clauses (*that* and *to*), *wh*-relative clauses, and non-finite relative clauses are all much more common in academic writing than in conversation, although none of these structures is especially frequent in absolute terms". Later in their work, they say that finite relative clauses are much more frequent in newspaper prose than in academic writing and conversation, but that non-finite relative clauses are found most often in academic prose (Biber and Gray 2016: 106).

5. Methodology

The research part of this paper is based on several hypotheses regarding the frequency of noun modifiers. Specifically, the research is conducted with the aim of determining the frequency and the type of pre-modifiers and post-modifiers used in three registers – academic writing, conversational register, and newspaper prose. To get this information, an online tool, Sketch Engine, was used because of its large collection of corpora, and because of it offering different options enabling a time-efficient analyses of corpora. All hypotheses are tested through the thorough analysis of the data extracted from corpora available in Sketch Engine or compiled by it. Also, all hypotheses are formulated against the backdrop of previous research cited above.

The first hypothesis is that academic writing and newspaper prose feature more complex noun phrases, i.e. noun phrases consisting of more than 2 words, while conversational register uses less complex noun phrases.

The second hypothesis is that nouns are more often post-modified in academic writing and newspaper prose than they are in conversational register.

The third hypothesis is that adjectives are more often found as pre-modifiers in conversation than they are in academic writing and newspaper prose.

To test the hypotheses, an analysis of three corpora was conducted and it was conducted in a way that the first 200 multi-word terms generated by Sketch Engine were analyzed and put into table, then further divided into categories. The categories in the table are as follows: noun phrase, head noun, pre-modification, post-modification and type of modification. By types of modification, it is meant that the following categories were taken as options: noun, attributive adjective, participial adjective, prepositional phrase, appositive noun phrase, finite relative clause, non-finite relative clause.

Conversational and newspaper corpora were already available on Sketch Engine and the first corpus contains 3,202,026 words while the second one is much larger and contains 654,435,545 words. Since the newspaper corpus is too large, a subcorpus which consists of 125,209,635 words was used for the analysis. The third corpus, academic writing, was created specifically for this paper using Sketch Engine's option to create your own corpus, and it contains 748,530 words.

Furthermore, to make the analysis simpler, the research was conducted by using the multi-word terms option available on Sketch Engine. Multi-word terms are terms or phrases consisting of multiple words and they denote a certain concept. The reason for using this option is the

assumption that the complexity of multi-word terms will also reflect the complexity of other NPs in the corpus, or in other words, it will be applicable to all the categories of modifiers listed in the paper so far.

Moreover, there are a few other assumptions which this research is expected to confirm. One of them being that descriptor adjectives are used quite often in conversational register and this could be confirmed by having multi-word terms such as *white lie, big shot* or something similar. When it comes to newspaper prose and academic writing register, examples like *the implications of artificial intelligence on job displacement* are expected to be found. Also, participial adjectives, e.g. *advancing striker*, *ambushed soldier*, are assumed to be common in newspaper prose. These assumptions are based on the previous facts about the three registers listed by Biber and Conrad (2019).

6. Research

The research included three registers: academic writing, newspaper prose and conversation. The first register, academic writing, was compiled by Sketch Engine. The texts used to make this register were downloaded from various websites which focus on academic texts and this corpus consists of 748,530 words.

The second register, newspaper prose, is the one already available in Sketch Engine – 'English Broadsheet Newspapers 1993-2013' containing 654,435,535 words. As it is not comparable in size to the previous corpus, a subcorpus of texts from 'Guardian' was selected, containing 125,209,635 words. The third register is conversation, also already available in Sketch Engine – 'Open American National Corpus (spoken)' and it contains 3,202,026 words. Since the corpora are different in sizes, results of the research will be converted into percentages. Also, it is important to note that some noun phrases in the conversational register might seem unexpected and this is due to the fact that this corpus is comprised of texts from all genres from 1990 and onward – specifically transcripts of spoken data from all genres. This corpus was chosen as a way to analyze spoken text, and conversation falls under that category, but there is not any available corpus on conversations alone in Sketch Engine.

In the methodology chapter of this paper it was explained that multi-word terms are phrases or terms consisting of multiple words which denote a certain concept. It was also explained that Sketch Engine's option to extract those multi-word terms was used so as to make the analysis simpler by assuming the results from that option are also applicable to other types of modification. Before using Sketch Engine's option to find multi-word terms, some advanced settings must be applied. Academic writing and conversation registers have the same settings – the focus setting is on neither rare nor common terms, but somewhere in the middle, but more towards rare, and numerically that is 1. Newspaper prose has different settings – focus is in the middle, numerically 10, minimum frequency is 1, while maximum frequency is 10. While creating the list, if there are some single letters, roman numerals written as e.g. *ii*, and anything else that is not a word in the sense which is needed for this paper is included in the list of which 'words' to exclude. Furthermore, the minimum frequency is set to 10, while there is no maximum frequency. The reference corpus is the one that Sketch Engine puts as default – 'English Web 2021 (enTenTen21)' and the maximum numbers of terms to be extracted is one thousand.

Furthermore, the next step of this research is the actual analysis of extracted noun phrases. First to be analyzed is academic writing and a table of 200 noun phrases and the categorization of its

modifiers is available as an appendix, but, due to spatial constraints, in the actual paper only 20 phrases are listed in order to demonstrate the way the analysis was conducted.

Number	Noun Phrase	Head noun	Pre-modification	Post-modification	Type of modification
1.	temporary number	number	temporary	/	adjective
2.	capability approach	approach	capability	/	noun
3.	incarcerated individual	individual	incarcerated	/	(-ed) participial adjective
4.	science in transition	science	/	in transition	prepositional phrase
5.	practice of science	practice	/	of science	prepositional phrase
6.	probation service	service	probation	/	noun
7.	philosophy of science	philosophy	/	of science	prepositional phrase
8.	number of coins	number	/	of coins	prepositional phrase
9.	prison architecture	architecture	prison	/	noun
10.	bronze coin	coin	bronze	/	adjective
11.	mobility in the ancient world	mobility	/	in the ancient world	prepositional phrase
12.	individual city	city	individual	/	adjective
13.	modern prison	prison	modern	/	adjective
14.	black-figure amphora	amphora	black-figure	/	noun phrase
15.	information theory	theory	information	/	noun
16.	research evaluation	evaluation	research	/	noun
17.	public management	management	public	/	adjective
18.	similar size	size	similar	/	adjective
19.	media technology	technology	media	/	noun
20.	uncertain attribution	attribution	uncertain	/	adjective

Table 1. Academic writing register

The same table is available for the other two registers. The following table is for newspaper prose:

Number	Noun Phrase	Head noun	Pre-modification	Post-modification	Type of modification
1.	agriculture produce market	market	agriculture; produce	/	noun; noun
2.	agent for the airline	agent	/	for the airline	prepositional phrase
3.	advertisement control order	order	advertisement; control	/	noun; noun

4.	adolescent fraternity	fraternity	adolescent	/	adjective
5.	admitted use of cocaine	use	admitted	of cocaine	(-ed) participial adjective + prepositional phrase
6.	antipoverty plan	plan	antipoverty	/	noun
7.	admiration for the noble art	admiration	/	for the noble art	prepositional phrase
8.	anonymous rebel soldier	soldier	anonymous; rebel	/	adjective; noun
9.	African-born partner	partner	African-born	/	(-ed) participial adjective
10.	admission talk	talk	admission	/	noun
11.	ambitious new manifesto research strategy	strategy	ambitious; new; manifesto; research	/	adjective; adjective; noun; noun
12.	ad for old-fashioned wall phones	ad	/	for old-fashioned wall phones	prepositional phrase
13.	all-season feather duvet	duvet	all-season; feather	/	noun phrase; adjective
14.	anti-doping organizations	organization	anti-doping	/	noun
15.	action on youth unemployment	action	/	on youth unemployment	prepositional phrase
16.	agreed permanent deal	deal	agreed; permanent	/	(-ed) participial adjective; adjective
17.	appalling human suffering	suffering	appalling; human	/	adjective; noun
18.	absent adviser	adviser	absent	/	adjective
19.	aircraft financing sector	sector	aircraft financing	/	noun phrase
20.	absence of a dedicated movie	absence	/	of a dedicated movie	prepositional phrase

Table 2. Newspaper prose register

The last table is for conversation:

Number	Noun Phrase	Head noun	Pre-modification	Post-modification	Type of modification
1.	biology book	book	biology	/	noun
2.	new question	question	new	/	adjective
3.	ninth-grade biology	biology	ninth-grade	/	noun phrase
4.	intelligent design	design	intelligent	/	adjective
5.	biology class	class	biology	/	noun
6.	posterior probability	probability	posterior	/	adjective
7.	board meeting	meeting	board	/	noun
8.	ninth-grade biology class	class	ninth-grade; biology	/	noun phrase; noun
9.	box of ice cream sandwiches	box	/	of ice cream sandwiches	prepositional phrase
10.	biology textbook	textbook	biology	/	noun
11.	biology curriculum	curriculum	biology	/	noun

12.	nation building	building	nation	/	adjective
13.	further question	question	further	/	adjective
14.	retrospective extension	extensive	retrospective	/	adjective
15.	clause argument	argument	clause	/	noun
16.	biology text	text	biology	/	noun
17.	fact witness	witness	fact	/	noun
18.	fair statement	statement	fair	/	adjective
19.	health-care cost	cost	health-care	/	noun phrase
20.	tax relief	relief	tax	/	noun

Table 3. Conversational register

6.1. Research results

The first 200 hundred terms extracted by Sketch Engine were considered for the analysis. By analyzing the tables compiled using the data from Sketch Engine, several facts may be stated about all three registers: multi-word terms in the analyzed corpora have more pre-modifiers than they do post-modifiers, adjectives are mainly used as pre-modifiers, and prepositional phrases are most commonly used as post-modifiers.

In academic writing, there are 217 modifications in total, of which there are 171 pre-modifiers, or 78.8 percent, and 46 post-modifiers, or 21.2 percent. Adjectives make up 66.67 percent of all pre-modifiers, and nouns make up the remaining 33.33 percent. When it comes to post-modifiers, prepositional phrases make up all 100 percent of post-modifiers.

In newspaper prose we have a similar situation – there are more adjectives as pre-modifiers and prepositional phrases are mostly used as post-modifiers. There are 293 modifications in total, out of which 200, or 68.26 percent, are pre-modifiers, and 93, or 31.74 percent are post-modifiers. There are 67 nouns which is 33.5 percent out of all pre-modifiers, and the rest, 66.5 percent, is made up by adjectives. There are 91 prepositional phrases used as post-modifiers, or 97.85 percent. The rest is made up by one *ing*-clause post-modifiers, or 1.08 percent, and two adjectives as post modifiers, or 2.16 percent.

Conversation prose has the following statistics: there are 212 modifiers in total, and 49 of them, or 23.11 percent are post-modifiers, and 163 of them are pre-modifiers, which is 76.89 percent. There are 72 nouns, or 44.17 percent of all pre-modifiers, and there are 91 adjectives, or 55.83 percent. Out of 49 post-modifiers, all 49 are prepositional phrases.

By looking at the given data, the three hypotheses can be commented on. The first hypothesis was that academic writing and newspaper prose feature more complex noun phrase than conversational register which is confirmed to be true. There are 293 modifiers in newspaper, 217 in academic writing and 212 in conversation.

The second hypothesis was that nouns are more often post-modified in academic writing and newspaper prose than they are in conversation which is confirmed to be untrue. Academic writing has 46 post-modifiers, newspaper prose has 93, and conversational register has 49.

The third hypothesis was that adjectives are more often found as premodifiers in conversation than they are in academic writing and newspaper prose and this is actually proven to be incorrect – academic writing has 66.67 percent of adjectives in the pre-modification position, and newspaper prose has 66.5 percent, while conversational register has only 55.83 percent.

Furthermore, some assumptions were made – that descriptor adjectives are used often in conversational register, that participial adjectives are common in newspaper prose, and that academic writing and newspaper prose contain more often complex noun phrases, i.e. phrases consisting of multiple premodifiers and postmodifiers. These are all proven to be true. Out of 133 adjectives in pre-modifying position, 31 of them are participial adjectives in the newspaper prose corpus. On the other hand, in the conversational register, out of 91 adjectives as pre-modifiers, only 8 of them are participial adjectives and the rest are descriptors. The last assumption is proven by the fact that both those registers have more modifications in total than conversation register – newspaper prose has 293 modifiers and academic writing has 217 which means that out of 200 extracted terms, at least 15 from academic writing have more than one modifier and at least 50 from newspaper prose.

We also need to point out some constraints of this research. Since our analysis was based on multi-word terms, which rarely include clausal postmodifiers, these were not visible in our results. This presumably tips the scale in favor of premodifiers, especially in the academic discourse.

Also, the corpus we used to represent the conversational prose, turned out to contain scripted spoken texts which are actually more similar to written discourse than to real conversational prose. This has also presumably affected our results.

7. Conclusion

In the paper we discuss noun modification across different registers. The paper is divided into three main parts – in the first part we provide information on registers, the second part focuses on nouns and their modifications, while the third part presents our research. Since three registers (conversational, academic writing and newspaper prose) have been selected for this paper, first some general notions related to registers have been given, and then the paper focused more on features of specific registers. Biber and Conrad (2019) have defined a text as "an instance of extended discourse that has a clear start and finish, such as a research article or a sermon", and register features as "words or grammatical characteristics that are pervasive (distributed throughout a text from the register), and frequent (occurring more commonly in the target register than in most comparison registers)". They have listed several features of the three registers. Some important situational features, i.e. contextual features, of academic prose, or academic writing, are that it is often written by an adult trained professional, mode is writing, often requires careful reading to be comprehended fully, and the communicative purpose is informative, explanatory and/or persuasive. Situational features of newspaper prose are that the author is often and adult journalist, the mode is writing, and the expected time of reading the text is the one in which it was produced. Conversational register has the following situational features: direct interaction between at least two people is needed, it has to be at the same place and at the same time, both participants must speak, and topics of the conversation are events, thoughts and opinions.

Furthermore, Biber and Conrad (2019) have listed linguistic features of all three registers. For academic writing they state that nouns are very common, nominalizations are extremely common, prepositional phrases after nouns are extremely commons nouns as nominal premodifers are common, and so on. Newspaper prose has similar features: nouns and nominalizations are common, attributive adjectives are common, and nouns as nominal premodifiers are extremely common, etc. On the other hand, conversational register has almost the opposite features – nouns are less common, attributive adjectives are less common, nouns as nominal modifiers are rare, etc.

After having listed all the features, the paper switched focus to nouns and their modifiers. It was first explained that noun phrases consist of a noun, a determiner and optionally a modifier. By using a book by Biber et al. from 2008, a division of modifiers was made: pre-modifiers and post-modifiers. These were further divided into phrasal pre-modifiers, which can be attributive adjectives and participial adjectives, and clausal and phrasal post-modifiers – finite relative clauses, to-clauses, -ing clauses, -ed clauses, prepositional phrases and appositive noun phrases.

These two parts of the paper were then connected and discussed as a part of the chapter 'Relationship between noun phrases and registers'. For this part of the paper, Jo-Anne Hutter's work from 2015 was used extensively as she has analyzed this relationship with much detail.

The research part of the paper opens with the description of the methodology used. The research is conducted using an online tool Sketch Engine and its option to extract multi-word terms – phrases or terms consisting of multiple words. The assumption was made that the data gathered from that option will be applicable to all modifiers in the three registers. Furthermore, three hypotheses were formulated – academic writing and newspaper prose feature more complex noun phrases, while conversational register uses less complex noun phrases; nouns are more often post-modified in academic writing and newspaper prose than they are in conversational register; adjectives are more frequent as pre-modifiers in conversations than they are in academic writing and newspaper prose. Only the first hypothesis was confirmed to be true for the studied corpora, while the remaining two were proven to be untrue.

Therefore, the analysis of results has shown that noun phrases found in conversational prose are quite simple, while noun phrases found in written texts, be that newspaper articles or academic articles, require pre- and post-modifiers in order for them to be more informationally dense.

As stated previously, the results of our research in some respects run counter to the results of previous studies in the field of register analysis, which can be put down to some constraints of our research. First, as we have based our analysis on multi-word terms, we were unable to capture clausal postmodifiers, which has presumably affected the results.

Also, the corpus we used to represent the conversational prose, turned out to contain, in addition to conversational prose, scripted spoken texts which are actually more similar to written discourse than to real conversational prose. This has also presumably affected our results.

The future research into register differences should therefore take into consideration these constraints and try to remedy them.

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