Complexity of English NPs: A Corpus-Based Study of Complex NPs Featuring Multiple Premodification

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Kompleksnost imenskih sintagmi u engleskom jeziku: korpusna analiza kompleksnih imenskih sintagmi s višestrukom premodifikacijom

Završni rad

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Complexity of English NPs: a corpus-based study of complex NPs featuring multiple premodification

The aim of this paper is to explore the complexity of English noun phrases with emphasis on the order of premodifiers, i.e. to describe the factors that determine the relative position of premodifiers within NP strings. Earlier studies have shown a great deal of variability considering the subject, providing divergent interpretations: structural, semantic, transformational, and psycholinguistic (Feist 2008: 22). Diverse syntactic, semantic, morphological and other properties of premodifying items have impinged upon finding a unitary premodification model by making it difficult to locate a demarcation between their various meanings, interrelations, and usages. Nevertheless, a good deal of systematicity still exists (Langacker 2008: 320). In the paper, we set out to explore this systematicity by conducting a corpus analysis based on the premodification model given by Quirk et al. (1985). The model incorporates multiple linguistic factors in clarifying the phenomenon, which is why we opted for it, hypothesising it would provide a satisfactory explanation of premodifier order. Our analysis features 70 examples of randomly chosen premodification strings obtained by skimming through three different types of sources: an electronic online corpus (Corpus of Contemporary American English, or COCA), Google articles, and four literary works. Once the data had been collected, we proceeded to examine Quirk et al.'s model by exploring how well it fitted our corpus data. The examples that did not fit or may have been described more accurately were processed by additional explication. The results of this study mostly support our expectation—Quirk et al.'s model proved to be effective, successfully incorporating a solid majority of the corpus data. Still, our conclusions should be seen as preliminary pending a more thorough quantitative-qualitative analysis of a bigger corpus of data in the future.

Keywords: noun phrase, complexity, premodification, premodifiers, ordering, zone, subjective

Contents

1. Introduction

English noun phrases and their internal structure are a complex subject matter around which there is no consensus among linguists. This is the consequence of numerous syntactic, semantic, morphological and other properties of NP elements, which, due to their variable nature, may serve different functions as modifiers of the noun phrase and thus have different relative positions among themselves within an NP string. There have been numerous attempts to give a unified scheme of the order of these modifying items. The approaches have been diverse: structural, semantic, transformational, and psycholinguistic (Feist 2008: 22). Whorf (1956), according to Feist (2008: [12]), "appears to have been the first linguist to give a theory of the order of premodifiers in nominal phrases". Whorf states that adjectives that pertain to "inherent" qualities are positioned nearer the head noun, as in *pretty French girl* (1956: 93). Oller & Sales (1969: 222) take a psycholinguistics approach, concluding that "modifiers in the English NP are ordered from the least limiting to the most limiting proceeding away from the head noun." This means that each next modifier denotes a subclass of the class denoted by the adjacent modifiers. Danks & Glucksberg say that the order is based on pragmatic grounds, where the most "discriminative", emphasising adjective takes precedence: "Thus, if a speaker intends to refer to one of two tables, one of them Swiss, one German, and both red, he would say 'Swiss red table', and not 'red Swiss table'" (1971: 66, as cited in Feist 2008: 14). Quirk et al. (1985: 1341) propose a principle relying on a subjective/objective polarity, stating that the more subjective quality an adjective bears, the farther it will be placed from the head of the NP. Halliday (2004) follows the view taken by Oller & Sales (1969), where each premodifier indicates a subclass of the class of the subsequent item. Feist (2008: 13) bases his model on semantics, stating that "premodifier order depends fundamentally on semantic structure—the types of meaning that make up the word." Langacker (2008: 319), in line with Whorf, says that premodifiers that denote intrinsic or permanent quality—in particular those that pertain to type—tend to be closest to the head. Although recent studies have brought significant progress in the development of interpretations of premodifier order, "there has been no development of a consensus, nor any effective integration of different approaches" (Feist 2008: 22). Nevertheless, despite the complexity of the premodification issue, there is still a great deal of systematicity (Langacker 2008: 320).

This paper will deal with the complexity of noun phrases with emphasis on the order of premodifiers, i.e. we will try to describe different factors that determine the relative position of premodifiers and their interrelationships within a noun phrase string. To this end, we will conduct a corpus analysis to determine the systematicity of the patterns by which premodification elements are grouped. The model set up by Quirk et al. (1985) will serve as the basis for the analysis. We have opted for their model since it is—in Feist's (2008: 20) words—comprehensive, integrating multiple linguistic fields in describing premodifier order, including syntax, semantics, morphology and discursive functions. The main hypothesis is that it provides a satisfactory elucidation of the order of premodifiers. The aim of this paper is hence to determine the extent to which this system is relevant to explanation of the premodification phenomenon.

The paper is structured as follows. Section 2 covers the theoretical frame of the paper, focusing on expounding the NP and its internal parts. In addition, Quirk et al.'s (1985) model is briefly explained, as well as premodification variability. Section 3 covers the methodology of the analysis, focusing on the tools used for collecting the corpus data. The analysis takes place in Section 4, which is divided into two subsections, the first of which is intended for Quirk et al.'s theory, while additional corpus examples and the theories describing them are presented in the second part. We summarise and conclude our findings in Section 5.

2. Theoretical framework

2.1. *Definition and constituent parts of the NP*

Noun phrases are constructions that consist of one or more words, with a headword (typically a noun) as the only obligatory element, and which can function as subjects, objects, or complements of a clause (Leech 1981: 181–182). Alongside the head, Quirk et al. (1985: 62) propose that phrases are optionally built of determinatives, modifiers, and complements. The head is the core of the phrase since it determines both its semantic and syntactic type (McGlashan 1993: 204, as cited in Feist 2008: 2). This means that the function of the word that makes up the head of a phrase also determines its type. In: *She* | *took* | *a beautiful picture*, *she* (subject) and *picture* (object) make their phrases noun phrases. This is closely related to what Givón (1993: 248) calls "the semantic amalgamation principle": "Whatever semantic features belong to the head noun also belong to the entire noun phrase." The head is typically a noun or a pronoun (Carter & McCarthy 2006: 319), but it can also be an adjective preceded by the definite article (*the*), as in *The innocent are often deceived by the unscrupulous* (Quirk et al. 1985: 421), or even a determiner: *Many would disagree*[1] (Huddleston & Pullum 2002: 326). It can stand on its own, being endocentric, i.e. it alone can play a role identical to that of the whole construction: *We drank red wine* vs. *We drank wine* (Cruse 2000: 103). NPs, when used in discourse, refer to the linguistic or situational context (Quirk et al. 1985: 253). Within the context, the reference of the noun is given by determinatives, which determine the kind of reference a nominal phrase has: for example, by making it definite (*the*), indefinite (*a*/*an*), or by indicating quantity (*many*) (Leech & Svartvik 2002: 205). Modifiers "add 'descriptive' information to the head, often restricting the reference of the head" (Quirk et al. 1985: 65), which means they make the phrase more specific. There is no grammatical limit to the number of modifiers that can occur within a simple NP (Huddleston & Pullum 2005: 96). However, only around 2% of premodified NPs have three- or four-word premodification (Biber et al. 1999: 597). Since they are not crucial for this thesis, we will not indulge in a detailed illustration of postmodifiers, yet only give their structural components in the following description. One structure of the NP could be set up as described by Givón (2001: 4):

[1]Adjectives and determiners which function as heads fall under so-called fused-head constructions. (Huddleston & Pullum 2002: 326; see also Huddleston & Pullum 2005: 97–99)

NP = (Quant) (Det) (AP*) (N*) N (Pl) ({Rel, PP, N-comp})[2]

As we can see, the NP consists of quantifiers[3] (Quant), determiners (Det), adjective phrases (AP), and nouns (N). Those elements precede the head, which is followed by postmodifiers: the plural morpheme (Pl), relative clauses (Rel), prepositional phrases (PP), or noun complements (N-Comp).

Biber et al. (1999: 574) propose a slightly different scheme:

determiner + (premodification) + head noun + (postmodification and complementation)

This scheme differs from Givón's and Quirk's in having the determiner as a mandatory element, which indicates that theories may vary from one another, as the NP phenomenon is quite complex. Premodifiers, as the central concept of this thesis, will be described in detail as the work progresses.

2.2. *Premodification within NPs*

2.2.1. Definition and properties of premodifiers

Premodifiers are modifiers that precede the noun which is the head of the phrase in order "to 'modify' or limit its meaning" (Berry 2012: 15), making it more specific; for instance, *a red metal chair* has a more specific meaning than *a metal chair*. Premodifiers include adjectives (or adjective phrases; see Quirk et al. 1985: 417) (*a special project*), participles (*written reasons*, *detecting devices*), and nouns (*the police report*) (Biber et al. 1999: 575). We may also find adverbs that premodify adjectives, as in *beautifully warm weather* (Quirk et al. 1985: 1239), or the head directly, as in *the then prime minister* (Feist 2012: 6). Genitive and sentence premodifiers are also available, as in *I visited his fisherman's cottage* and *She has asked I don't know how many people to the party*, respectively (Quirk et al. 1985: 1322). Modifiers can be restrictive or nonrestrictive, depending on whether the head requires additional essential identification through the modification (restrictive) or it carries its uniqueness, in which case they only serve to add additional information, not essential for identifying the head (nonrestrictive) (Quirk & Greenbaum 1973: 376). Premodifiers are most often nonrestrictive: Quirk & Greenbaum (1973: 377) explain that our opting for using a

[2] The elements placed within the parentheses are optional, while those inside the curly brackets are exclusive, meaning only one type of them can occur at the time. The asterisk (*) stands for the possibility of optional recursion, i.e. the repeated application of the element.

[3] Although quantifiers are typically classified as determiners by linguists, Givón (2001: 4–6) puts them in their separate positions.

premodifier (such as *silly* in *The silly boy got lost*) "often reflects our wish that it be taken for granted and not be interpreted as a specific identifier". This is consistent with another property of the premodifier, expressed in the claim that its application results in "a noun phrase whose modification is generally less explicit than that of postmodification" (Quirk et al. 1985: 1321). This could be the result of premodifiers being "much more condensed than postmodifiers, using many fewer words (often a single word) to convey similar information" (Biber et al. 1999: 588). Langacker (2008: 319) states that premodification specifies an intrinsic or permanent property, whereas postmodification tends to be used "for properties of a contingent or temporary character". Quirk et al. (1985: 1242) agree on this: *the courteous man* (i.e. normally and not merely at this moment) vs. **the ready man*. The latter is not possible because someone's being ready is understood as having reference only to a specific time, making it a temporary feature, suitable for postmodification: *The man who is ready*.

2.2.2. Adjectival premodifiers

A description of a premodifier arrangement will be given in section 2.2.5., while here we will only state a division of adjectives that may take part in premodification. Common adjectives (non-participial adjectives) are the commonest premodifier category in all registers (Biber et al. 1999: 589). When used as premodifiers their function is attributive (*black hair*), while they are predicative when in postmodification after linking verbs (*Her hair is black*) (Huddleston & Pullum 2005: 112). Adjectives that can be put into both uses are called central adjectives, while those that can appear only in one of those two functions are called peripheral adjectives (Quirk & Greenbaum 1973: 115). An attributive adjective is typically positioned between determiners and the head noun: *the really important things* (Carter & McCarthy 2006: 445). First in line are "intensifying adjectives", which have either a heightening or lowering effect on the noun they modify and are non-prototypical in that they are peripheral and non-gradable (Quirk et al. 1985: 429).

According to Quirk et al. (1985: 429–430), there are at least three semantic classes of those:
(a) emphasizers (*a true scholar*, *plain nonsense*, *a sure sign*)
(b) amplifiers (*a complete victory*, *great destruction*)
(c) downtoners (*a slight effort*, *a feeble joke*)

Close to this group are limiter adjectives, which particularize the reference of the noun: *the main reason*, *the only occasion*, *the same student* (Quirk & Greenbaum 1973: 122). There are

also adjectives related to adverbials: *a big eater* – someone who eats a great deal (Quirk & Greenbaum 1973: 123).

The most prototypical are central, gradable adjectives, i.e. the "most adjectival items" (Quirk et al. 1985: 1338), which satisfy all four criteria for adjective status[4]: (a) attributive use, (b) predicative use, (c) taking the intensifier *very*, and (d) taking comparative and superlative forms (Quirk et al. 1985: 404). Those are general adjectives like *big*, *funny*, *intelligent*, *keen*, *powerful*, *slow*. They can be non-derived, but also deverbal (*attractive*) or denominal (*sleepy*). In this group, we also find adjectives linked to subjective evaluation (*beautiful*).

Lastly, we have "least adjectival and most nominal" items, such as denominal adjectives denoting nationality, provenance and style (*Austrian*, *Midwestern)*, and denominal adjectives with the meaning "consisting of", "involving", or "relating to" (*experimental*, *statistical*, *political*) (Quirk et al. 1985: 1339). Those are normally peripheral adjectives.

Adjectives are often preceded by a submodifying adverb which is put in front of the adjective to additionally characterise it (Cobuild 2011: para. 1.69): *a very beautiful car*. Hence we are dealing with adjectival phrases and not adjectives on their own.

2.2.3. Participial premodifiers

Participles (-ing and -ed) are a complex subject around which there is no consensus among linguists. This is due to their various syntactic and semantic functions, which makes it difficult to find their line of demarcation from other word classes. Haspelmath (1994: 152) defines them as "verbal adjectives", i.e. words that are derived from verbs but are like adjectives in terms of morphology and external syntax. Like adjectives, participles also modify the head noun with which they are combined. Biber et al. (1999: 530–531) state that participial premodifiers are mostly adjectival with a verbal basis, but can also be noun-related, whereas in other cases their word-class membership is not transparent. There is a large number of adjectives ending in participial suffixes. Quirk et al. call them participial adjectives (1985: 413). However, not every such adjective is in fact a participle: this is the case when there is no corresponding verb form (*the unexpected results – *to unexpect*, *her downhearted*

[4] Note that many central adjectives lack one or more of those criteria: e.g., "extreme adjectives" (the term taken from Paradis [2001]) like *infinite* and *huge* can't be intensified by *very,* nor can they take comparative and superlative forms.

*children – *to downheart*, *his talented friends – *to talent*) (Quirk et al. 1985: 413) or when it is noun-derived: *a skilled engineer – a skill* vs. **to skill* (Cobuild 2011: para. 2.90). A participle can be made fully adjectival (see criteria for adjective status in section 2.2.2.) when compounded with another element: *good-looking*, *heart-breaking* (Quirk & Greenbaum 1973: 141). If a participle is classifying (denoting a type) rather than descriptive, it becomes noun-like (*falling sickness*) (Feist 2012: 183). When used as attributive modifiers of nouns, participles vary in their degree of being adjective-like, some being more or less adjectival than others (Adams 1973: 21). This is important because their variability may affect their position within the order of premodifiers.

2.2.4. Noun premodifiers

Nouns are the second most common type of premodifiers in all registers (Biber et al. 1999: 589). When used as a premodifier, a noun can be related to the noun phrase with a postmodifying prepositional phrase: *a newspaper reporter – a reporter for a newspaper* (Berry 2012: 15). However, this relation is often covert, since premodification has reduced explicitness (see section 2.2.1.), which features particularly prominently in premodification by nouns, because it mostly relies on implicit meaning (Biber et al. 1999: 588), as in *elephant boy – boy who resembles an elephant* vs. *boy who takes care of elephants*. If the N + N relationship becomes highly unpredictable, premodification is unacceptable: *a tree by a stream – *a stream tree* (Quirk et al. 1985: 1331). Unlike adjectives, which tend to be nonrestrictive, nouns as modifiers are usually restrictive because they combine with their heads to form units with a specific reference (e.g. *flower seller*) (Pastor Gomez 2009: 41). They occur almost always in the identifying, referential use, and rarely in the descriptive one: *passport photo* denotes simply a type of photo, not its dimensions or other characteristics (Feist 2008: 55). Quirk et al. (1985: 1340) claim that unlike adjectives, which provide subjective and temporary information, noun premodifiers provide objective information, i.e. they have a classifying function. This objectiveness results in noun premodifiers often being so closely associated with the head as to be regarded as compounded with it, which is indicated by the stress on the premodifying noun instead of the head: *his 'life story*, *a 'dish cloth*. As free combinations, we say: *an ˌiron 'rod*, *ˌlife 'imprisonment* (Quirk et al. 1985: 1330). The referential character of nouns can also be seen in their becoming head of the phrase (*cashew nuts → cashews*, *a television set → a television*) (Feist 2012: 39). This is consistent with the premise that elements placed farther from the head noun denote subjective

properties, while elements closer to the head noun are more objective, denoting a type rather than describing (Quirk et al. 1985: 1341).

2.2.5. Relative order of premodifiers

This section covers a short description of the premodifying zone structure given by Quirk et al. (1985) because it will be the basis for the corpus analysis. A detailed description with a much broader scope and the corpus data will be given in the process of analysis in chapter 4. Quirk et al. (1985: 437) divide premodifiers into four adjacent zones, into which they are put based on their semantic and syntactic properties. They are located between determinatives and the head in the following order: (I) precentral, (II) central, (III) postcentral, and (IV) prehead.

(i) Zone 1: precentral

In this zone we find peripheral non-gradable adjectives, in particular intensifying adjectives (*certain*, *definite*, *absolute*, *entire*, *feeble*, *slight*), followed by numerals and limiter adjectives (*the fourth student*, *the only occasion*) (see section 2.2.2.).

(ii) Zone 2: central

The "most adjectival items", which satisfy all four criteria for adjectival status, are placed into this zone. These are the most prototypical adjectives: *big*, *funny*, *intelligent*, *powerful*, *slow*. If we have more than one adjective of this type in the zone, the usual order is non-derived + deverbal + denominal (*a tall attractive woman* / *a satisfied sleepy look*). Among nonderived adjectives, the order is largely arbitrary, but those denoting size, length, and height tend to precede other non-derived adjectives (*a small round table*). After them come adjectives denoting age (*young*, *old*, *new*). This zone also contains adjectives with emotive, evaluative, subjective traits, which precede all the others (*beautiful long hair*).[5]

(iii) Zone 3: postcentral

In this zone we find participles (*retired*, *sleeping*) and colour adjectives (*red*).

(iv) Zone 4: prehead

This zone comprises "least adjectival and most nominal" premodifiers, divided into three subgroups:

(i) adjectives that denote nationality, provenance, and style: *American*, *Gothic*

[5] It is important to note that those are tendencies rather than absolute rules (Quirk et al. 1985: 1339).

(ii) denominal adjectives with the meaning "consisting of", "involving" or "relating to": *annual*, *economic*, *medical* (those denoting place and time take precedence: *local economic interests*, *the annual linguistics meeting*)

(iii) nouns: *tourist attraction*, *Yorkshire women*, *college student*

For examples of premodifier sequences see table (1) below.

Table 1: Examples of sequences of premodifiers (after Quirk et al. 1985: 1340)

Determiners	Zone I: precentral	Zone II: central	Zone III: postcentral	Zone IV: prehead	Head
our	numerous	splendid		African tourist	attractions
all this			costly	social	security
a	certain		grey	church	tower
these			crumbling grey	Gothic church	towers
some		intricate	old interlocking	Chinese	designs
all the		small	carved	Chinese jade	idols
both the	major			Danish political	parties

The above order is explained through a subjective/objective polarity. Namely, the authors claim that closest to the head come the modifiers that denote "properties which are (relatively) inherent in the head of the noun phrase, visually observable, and objectively recognizable or accessible", while those concerned with "what is relatively a matter of opinion, imposed on the head by the observer, not visually observed, and only subjectively assessable" are positioned farthest from the head (1985: 1341). However, this is only a general principle, not accounting for all cases. We will look in the following section at how variable this basic principle is.

2.2.6. Premodification variability

Despite there is a deal of systematicity, the patterns and rules we have described so far are by no means exclusive and irreplaceable. Here we come to the relationship of syntax (which prescribes grammatical rules) and semantics (which deals with meaning). Feist says that semantics generally dominates syntax when it comes to explaining phenomena, as well as when it comes to cases that do not strictly follow the rules of syntax. Therefore, syntax provides "some explanation of the order, but semantics explains the syntax" (2008: 124). For instance, we have an example of "labile ordering" from Huddleston & Pullum (2002: 452): *a large black sofa* (with contrastive stress on *black*). Not taking account of semantics, this order of premodifiers accords with syntax. However, given that contrastive stress is on *black*, the

emphasis is on the contrast between large sofas that are black and large sofas of some other colour, in which case *black* modifies *large sofa*, breaking the purely syntactic rule with the order of premodifiers reversed, yet remaining completely acceptable: *a* [*black* [*large sofa*]]. In addition, the importance of semantics can be observed in the fact that the same lexical item can have different syntactic functions, depending on the lexical habitus in which it is located. Thus, for example, *pure* can be a central adjective (*pure* [*clean*] *water – water is pure*) or an emphasizer (*pure* [*sheer*] *fabrication – *fabrication is pure*), which puts it into two separate premodification zones (Quirk et al. 1985: 430).

As this section shows, premodification is not restricted to rigidly set ordering rules but shows a great deal of variability, which will be demonstrated in chapter 4.

3. Methodology

Our analysis includes 70 noun phrase strings. It is conducted on the data obtained from three different types of sources, one of which is an electronic online corpus: Corpus of Contemporary American English, or COCA. COCA was searched by typing formulas such as _j* _j* _j* _n* _n* and randomly selecting examples by skimming through the results. The rest of the data was collected from various Google articles, and four literary works: *The Fellowship of the Ring* (1954) by J. R. R. Tolkien, and three works by Charles Dickens: *Bleak House* (1852), *Great Expectations* (1861), and *Hard Times* (1854). The Google data are marked in the analysis simply as "Google", while abbreviations are used for the literary works: "BK" stands for *Bleak House*, "GE" for *Great Expectations*, "HT" for *Hard Times*, and "FOR" for *The Fellowship of the Ring*. In both the Google materials and literary works the results were randomly collected by skimming through the text.

Once the database had been collected, we started the analysis by going through Quirk et al.'s (1985) premodification theory, incorporating in it the corpus examples to see to what extent this system is relevant for explaining the phenomenon. This will be presented in section 4.1. Those examples that do not fit into the system or may be further clarified will be discussed in section 4.2. The analysis is not quantitative but purely qualitative, pending a more dedicated future study combining qualitative and quantitative methods.

4. Analysis

4.1. *Quirk et al.'s relative sequence of premodifiers*

To begin with the description of the rules of premodification through the analysis of the corpus data, we will once again refer to the brief model of the premodifier zones by Quirk et al. (1985). As mentioned in section 2.2.5., the authors divide the premodification territory between the determinative (det) and head (head) slot into four premodification zones: I (precentral), II (central), III (postcentral), and IV (prehead). Now we are going to go through each zone using the collected corpus data.

4.1.1. Four premodification zones (the normal order)

In zone I (precentral) peripheral non-gradable adjectives are situated, in particular intensifying adjectives:

(1) *a complete, utter lie* (COCA)
(2) *sheer brutal force* (COCA)

In this zone we also find restrictive adjectives, which "restrict the reference of the noun exclusively, particularly, or chiefly" (Quirk et al. 1985: 430), see example (3).

(3) *a major American political party* (COCA)

Zone II (central) is where the "most adjectival items", i.e. the central, non-gradable adjectives, which meet all four criteria for adjectival status, are found. Since they are descriptive and used for characterisation, they often form contrastive pairs like big/small, good/bad, hot/cold. These "general" adjectives are mostly inherent, which means they characterise the referent directly. Both nonderived and derived (deverbal and denominal) adjectives are included in this group. They are lined up within the zone through morphology, with nonderived adjectives preceding deverbal ones, which are followed by denominal adjectives, as shown by examples (4–6).

(4) *a rich attractive mystery* (GE)
(5) *a large bulky envelope* (FOR)
(6) *a slovenly confined and sleepy look* (GE)

Among nonderived adjectives, the arbitrary order is frequent. Nonetheless, adjectives denoting size, length and height tend to precede other nonderived adjectives, see examples (7–9).

(7) *a little, thin, white, pink-eyed bundle* (HT)
(8) *a short fat old man* (COCA)
(9) *a lightweight, affordable, open two-seater sports car* (Google)

Within the central zone, we may further distinguish a group of adjectives concerning emotions and subjective evaluation. Following the subjective/objective polarity rule, according to which premodifiers denoting properties that are a matter of opinion and subjective assessment are placed farther from the head of the NP, this group of adjectives usually precedes the others:

(10) *a sweet little old lady* (COCA)
(11) *a beautiful round compact pork pie*[6] (GE)

Zone III (postcentral) comprises, in turn, participles:

(12) *the crashing, smashing, tearing piece* (HT)
(13) *a large pale puffed swollen man* (GE)
(14) *a licensed clinical social worker* (COCA)
(15) *a randomized controlled clinical trial* (COCA)

and colour adjectives:

(16) *beautiful long brown hair* (COCA)
(17) *some shining black portraits* (GE)
(18) *a tall pointed blue hat* (FOR)
(19) *the great black velvet pall* (GE)

Quirk et al. (1985: 1340) further distinguish adjectives of age, which precede participles and colour adjectives, see examples (20–23).

[6] Quirk et al. (1985: 1339) say that subjective adjectives often have an adverbial related meaning, such that *a beautiful round compact pork pie* is equivalent to *a beautifully round compact pork pie*. Therefore, a doubt may arise as to whether *beautiful* modifies the premodificator *round* or the head *pie*. Notwithstanding this ambiguity, both interpretations are possible.

(20) *the old burnt apron* (GE)
(21) *old building materials* (GE)
(22) *every new and eagerly expected garment* (GE)
(23) *that same old red hooded sweatshirt* (COCA)

In zone IV (prehead) we find the "least adjectival and most nominal" premodifiers. There are three main classes of those, farthest from the head of which are adjectives with a proper noun basis denoting nationality, provenance, and style, see examples (24–26).

(24) *above-average Atlantic hurricane activity* (Google)
(25) *some good old fashioned American reefer* (COCA)
(26) *the Australian Physical Literacy Framework* (Google)

The group just mentioned is followed by denominal adjectives which are related to nouns, with the meaning "consisting of", "'involving", or "relating to", see examples (27–30).

(27) *a fee-only certified financial planner* (COCA)
(28) *a senior German economic official* (COCA)
(29) *the earliest round-the-world marine research voyages* (Google)
(30) *the extremely sensitive magnetic storage capacity* (Google)

Closest to the head come noun premodifiers, as in examples (31–34).

(31) *the multivariable integrated evaluation method* (COCA)
(32) *a tall shapeless felt bag* (FOR)
(33) *record-shattering 2020 trans-Atlantic dust storm* (Google)
(34) *an appalling spasmodic whooping-cough dance* (GE)

Since they are in the position adjacent to the head noun, adjectives that belong to zone IV are not central but peripheral, due to their inability to satisfy general adjective criteria, including their not admitting intensifiers, comparative and superlative forms, or predicative position. Take a look at the above-mentioned example (27).

a fee-only certified financial planner
**a fee-only certified very financial planner*

**The planner is financial.*
**The planner is more financial than…*

When two or more prehead premodifiers from the same group co-occur, those which denote place and time take precedence, see examples (35–37).

(35) *a local public high school* (COCA)
(36) *a permanent international economic order* (COCA)
(37) *annual national student federalist society* (COCA)

Items within the prehead zone are usually not subject to coordination, as the following example demonstrates:

(38) *many other historic city sites* vs. **many other historic and city cites* (COCA)

Premodifying nouns, as items typically placed nearest to the head, may form a quasi- or full compound with the head, which is indicated by the stress pattern placed on the first item. This may result in forming a new conceptual unit, see examples (39) and (40).

(39) *the mildly sought-after Style Invitational bumper sticker* (COCA)
(40) *very lively combined birthday-parties* (FOR)

Denominal adjectives and premodifying nouns sometimes have little or no difference in meaning. For illustration, see the example below.

(41) *a designated foreign terrorist organization – a designated foreign terroristic organization* (COCA)

The above may be the reason why some noun premodifiers precede denominal adjectives in the prehead zone, see example (42).

(42) *the 13th licensed U.S. commercial rocket launch pad* (U.S. = American) (Google)

4.1.2. Recursive qualification

All the examples that have been presented so far may be described as fitting the rigid, grammatically prescribed order. Still, Quirk et al. (1985: 1341) say that despite the normal

order the speakers will be lead by semantics, i.e. they will arrange premodification according to their communicative intentions. One such example of disruption of the normal order may be realized by recursive qualification, i.e. by placing the item that semantically explains the previous item closer to the head, which gives a logical meaning to the whole construction. Grammatically set ordering is based (almost) purely on linguistic information. Not so is with recursive qualification, which is based on factual, world-knowledge information (Quirk et al. 1985: 1341), see the two examples below.

(43) *its characteristic East Anglian* ***round*** *tower* (COCA)

(44) *a characteristic* ***reemerging*** *pattern*[7] (COCA)

Following the recursive qualification rule, we can see in example (43) that in order to be considered characteristic and East Anglian, towers must be round. Scarcely true would be to say that, to be round, they must be characteristic and East Anglian. The same goes for example (44): for a particular pattern to be characteristic, it must be reemerging, while it would be unusual to require for some pattern to be characteristic so as to be reemerging. *Round* and *reemerging*, therefore, recursively explain the preceding premodifiers. Thus, the premodifier that follows is the condition under which the premodifier that precedes it gets its meaning. As mentioned, this is not linguistic but factual information—the speaker had been obliged to specify the tower and the pattern as round and reemerging, respectively, in order to describe them as characteristic.

4.1.3. Hypotaxis

In addition to the previous paragraph, Quirk et al. (1985: 1341) claim that the normal order may also be upset due to various hypotactic relations among premodifiers. See examples (45) and (46).

(45) *the first and fundamental positive law* (COCA)

(46) *the best [A]merican short stories* (COCA)

In its general adjectival meaning, which is intended for the normal ordering, *positive* would be positioned in front of *fundamental*, meaning *good*, the opposite of *negative*. However, *positive law* is referential and not descriptive, meaning *human-made law*, designating a type of law, as

[7] Depending on whether we treat *characteristic* as an adjective or noun, example (44) ***is*** or ***is not*** in line with the order by zones. The outstanding flexibility of English to convert words from one word-class to another by conversion without overt word formational formatives may to some extent affect the order or the explanation of it.

opposed to *natural law*, and is therefore placed closest to the head. In the latter example, *short* designates a type of fictional work which is characterised by its shortness and not any American story (possibly a told tale) that is short in length. Therefore, different hypotactic relations may lead to different meanings of the same word and consequently their different positions across the zones.

When we have an N + N premodifiying construction, "one which corresponds to the head as object to verb will follow one relating to material, means, instrument, space, or any comparable adverbial relation" (Quirk et al. 1985), as examples (47) and (48) demonstrate.

(47) *her SEER 17 heat pump water heater* [The heater heats water by a heat pump.] (COCA)
(48) *my metal garlic press* [The press presses garlic.] (COCA)

4.1.4. Multiple adjective/noun premodification

The order and relationship between premodifiers may be further complicated if the noun premodifier is itself premodified by an adjective or noun. If it is premodified by a noun, then we have the N + N premodification relation, see the examples below.

(49) *several major office building projects* (Google)
(50) *outsized air pollution death risk* (Google)

Here we do not have a simple straightforward left-to-right ordering, but a bit different scheme:

[*several* [*major* [*office building*] [*projects*]]]
[*outsized* [[*air pollution*] *death*] [*risk*]]

The above internal structure is relatively comprehensive. Nevertheless, Quirk et al. (1985: 1343) state that obscurity may occur if the hearer is unfamiliar with the subject concerned, so they cannot comprehend radically reduced explicitness, and "there is nothing about the grammatical, orthographic, or prosodic form" that will explain to them those internal relations. For illustration, see examples (51) and (52).

(51) *some fresh fruit salad* (COCA)
(52) *a temporary field office* (COCA)

Considering the former example, if the hearer is unfamiliar with this type of salad, nothing will tell them whether it is a salad made of fruits that have not been processed in any manner, or a salad that has been recently prepared of any kind of fruit (possibly dry fruit). Similarly is with the latter: if the hearer does not know of the concept *field office* (that is *branch office*), as opposed to *main office*, nothing will tell them whether it is a temporary office that is located separately from the main office, or an office for the temporary field, i.e. an information technology procedure, however unlikely the latter interpretation may seem.

4.1.5. Assessment of the model

Given the above, the conclusion is that, despite its briefness, Quirk et al.'s model appears to provide a satisfying explanation of the order of premodifiers. We draw this conclusion not only for the fact that the model fits a solid majority of our corpus data but also for its comprehensiveness, i.e. for integrating in apparently sufficient measure syntactic, morphological, semantical and discourse-communicative considerations.

Another reason why we find this theory satisfactory is that it is not exclusive. The authors leave room for different interpretations, concluding that premodification involves extremely subjective criteria and that, ultimately, the writers and speakers will arrange premodifiers guided by their intentions in communication.

4.2. ***Further explanation***

In the previous section we argued that Quirk et al.'s model is comprehensive and flexible enough to explain the bulk of actual language data. In this section, we will attend to some additional principles proposed by other authors to govern the organisation of premodifier strings.

4.2.1. Grouping principle

A general principle we find to be effective in explaining the issue of premodifier order is based on Langacker's cognitive grammar theory. As a general principle, it may actually be considered to subsume some of the patterns and explanations of premodifier order addressed earlier in sections 4.1.3. and 4.1.4. However, its appeal lies both in its more generalised nature and in the strong emphasis that cognitive grammar places on processes based on imagination

and mental construction rather than on formal explanations for grammatical phenomena. Langacker (2008: 323–327) proposes as an explanatory principle patterns of conceptual groupings. This means that premodifying items are grouped into concepts at either a single- or higher level of organisation. Groupings that occur at a single level of organisation are devoid of an internal grouping and they fit in the normal, straightforward modification pattern, where every item modifies the head directly and separately: [*frisky* [*young* [*horse*]]]. The previous sequence can be paraphrased as "a horse that is frisky and young". However, as Langacker explains, at a higher level of organisation two or more items may merge to create a unitary constituent: [*frisky* [*young horse*]]. Here we have a slightly different paraphrase: "a young horse that is frisky". Also, note the difference between [*counterfeit* [*American money*]] and [*American* [*counterfeit money*]]. These higher level groupings manifest in some of our corpus data too. Consider example (53):

(53) *new, high-volume, battery electric vehicles* (Google)

In the normal order, *battery*, as a noun, would be placed adjacent to the head *vehicles*. Yet there is some higher-level conceptual grouping, where by merging *electric* and *vehicles* a new mental concept has been created: *electric vehicles*. Now all the preceding modifiers modify this concept, and not the head *vehicles* separately. It could be said that now the concept acts as the head. See additional examples based on this principle, (54–60).

(54) *a little dry brown corrugated old woman* (GE)
(55) *the red large moon* (GE)
(56) *a tough high-shouldered stooping old man* (GE)
(57) *a large shining bald forehead* (GE)
(58) *wealthy old heterosexual white man* (COCA)
(59) *global extreme temperature-related fatalities* (Google)
(60) *effective*, *high quality school-based interventions* (COCA)

We find this theory to be convincing and accounting for a large number of premodification cases: "Grouping is such a natural and pervasive phenomenon (…) that binary structures are often (and not unreasonably) considered the default" (Langacker 2008: 326). The conceptual grouping principle applies to most examples to be presented in the remainder of the paper. Nonetheless, we will explain those by evoking some additional principles so to broaden the scope of explanation.

4.2.2. Marked order

The first of those principles is what Feist (2008) calls "marked order". It is an order in which the normal order is changed "in an apparently ungrammatical order (but one established by usage)" to achieve a special purpose (Feist 2008: 178). It is different from "unmarked order" (grammatically prescribed order) and "free order". See example (61).

(61) *Lynne Ramsay's stunning third feature* (COCA)

The numeral (*third*) is positioned closer to the head than the participial adjective (*stunning*). The normal order would be *Lynne Ramsay's third stunning feature*. In this case, following Feist's interpretation (2008: 188), *third* would be read restrictively, for its purpose of discriminating between the three stunning features, and *stunning* would be read as expressing given information. However, the order has been reversed, making both *stunning* and *third* the conveyors of new information. The phrase can now be paraphrased as "Lynne Ramsay has made three features, and the third one is stunning." The same goes for example (62).

(62) *a particularly good two years* (COCA)

Feist notes that such types of phrases may also be marked by the anomalous indefinite article *a*, as the example above shows, which is, strictly speaking, not grammatical.

4.2.3. Free order

Finally, there is the principle of free order. Feist (2008: 174) claims that this type of order is "set by stylistic choice, not grammatical rule". It is therefore used for achieving a stylistic effect. For instance, a premodifier can be placed in the first position, to be prominent, or the last, to form a climax. Otherwise, "the order is arbitrary" (Feist 2008: 176). See example (63).

(63) *a mild, good-natured*, *sweet-tempered*, *easy-going*, *foolish*, *dear fellow* (GE)

In this example, the premodifier *dear*, although a nonderived adjective, is positioned last, closest to the head. It is the most emotive word in the string. By putting the most emotive item last, the climax is obtained. *Dear* also represents the most significant concept; the premodifiers are climactic in terms of the emotions they represent, with each subsequent modifier being stronger than the previous one, which results in the climax by stating that the fellow is dear. This interpretation also applies to examples (64) and (65).

(64) *its graceful*, *beautiful*, *humane*, *impossible adornments* (HT)

(65) *a plain*, *bare, monotonous vault* (HT)

When it comes to placing premodifiers in the first position to achieve prominence, there have not been any such examples in the collected corpus data.

Quirk et al. (1985: 1341) mention that rhythm has been suggested for explaining preferences of the order of modifiers, "e.g. short items before longer ones". This may be described as "a simple phonetic rule" (Vendler 1968: 122, as cited in Feist 2008: 173). See examples (66–68).

(66) *a highly reactive and flammable, extremely smelly toxic gas* (Google)
(67) *many dark and dangerous days* (FOR)
(68) *new 2021 COVID-relevant fire safety and emergency evacuation guidelines* (Google)

As one may notice, the above-mentioned order is classified as free because it is not led by grammaticality. However, it is not completely arbitrary; the speaker is still influenced by the stylistic effect they want to achieve. Here we come to the last principle to mention, the one that removes all the ordering barriers—the principle of free ordering with utter arbitrariness. Oller & Sales (1969: 222) explain that there are cases where the order seems to be "quite irrelevant to the interpretation of the NP and its syntactic parsing". Feist (2008: 125) also states that there are phrases in which "there is no 'practical' significance in the syntactic order; but the order is fixed—by semantics." He exemplifies his point: *I stepped through the thick red velvet curtains of the Royal Opera House*. Since the curtains are identified by the postmodifier (*of the Royal Opera House*), there would be no difference if the order were *red thick velvet curtains*, or *red velvet thick curtains*, because the premodifiers are wholly descriptive, "adding separate facts about the curtains" (Feist 2008: 125). Thus, their relative order makes no difference for the phrase, as it is only important to enumerate the properties so that they are present, regardless of the order in which they are specified. For illustration, see the two examples below.

(69) *an extremely clear-headed*, *cautious*, *prudent young man*, *who was safe to rise in the world* (HT)
(70) *its homely*, *comfortable*, *welcoming look* (BH)

As can be noticed, example (69) includes the postmodifier *who was safe to rise in the world*, precisely for the reason just mentioned. In the phrase, the man is described as someone who has a bright future ahead. With this in mind, the premodifiers are purely descriptive, not

affecting the informational content of the head noun *man*, regardless of their order within the string. Therefore, there is no difference between the example as written above and the same example with the changed order of the premodifiers:

a prudent, *cautious*, *extremely clear-headed young man*

Just to note, example (69) fits Quirk et al. theory if we look strictly at the syntactic order (although it is explained differently at the semantic level). The same is true of example (70), which perfectly illustrates the arbitrary order rule; the *look* is described by all three modifiers as arousing a warm and pleasant feeling. Thus, there would be no practical, substantive difference even if the order were changed to:

its welcoming, *comfortable*, *homely*[8] *look* or *its comfortable*, *homely*, *welcoming look*

Oller & Sales (1969: 222–223) further explain that such premodifiers function as a cluster of properties devoid of hierarchical structuring. The authors demonstrate this claim by saying that examples such as (70) can be paraphrased by inserting an *and* after each premodifier except the last one, e.g.,

its homely, *and comfortable*, *and welcoming look*

Feist (2008: 173) concludes that there is no motivation for the arrangement of ordering in these types of examples since it would produce neither a difference in meaning nor in stylistic effect. As Chomsky (1966a: 13) states: "in its normal use, human language is free from stimulus control and does not serve merely a communicative function, but is rather an instrument for the free expression of thought (…)"

[8] In BrE *homely* means *cosy*, *comfortable*. In AmE, it means *ugly*, *unattractive* (of a person).

5. Conclusion

This paper sought out to explain the internal structure of English noun phrases, specifically the order of premodifying elements. The rationale for the study was the fact that, due to their volatile properties, premodifiers and their interrelations make it challenging to find a unified premodification model which would explain the subject matter. The key idea was to investigate the systematicity of premodification through descriptive research based on the premodifier model provided by Quirk et al. (1985). Given that the model in question, although brief, approaches the elucidation of the phenomenon taking into account several linguistic factors, the main hypothesis was that this model could offer a relevant explanation for the order of premodifiers. After collecting the corpus data by randomly searching through the corpora, we tried to incorporate them into Quirk et al.'s model to assess how well the model fitted the data. The study results confirmed our hypothesis—most corpus examples matched the theory in question. The model showed the breadth of interpretation not limited to a strictly syntactic order but taking into account morphological, semantic, and discourse-related factors. In addition, the authors did not reject other possible interpretations for the phenomenon of multiple premodification; for example, although according to their model deverbal adjectives precede denominal ones, they noted that the order is largely arbitrary. Finally, they concluded that the speaker would arrange modifiers in accordance with their communicative intentions. This is consonant with some other explanations for the more "freely" constructed NP strings presented in the paper, specifically the explanations provided by Langacker (2008) and Feist (2008).

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