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CO-OCCURRENCE OF REGULAR AND IRREGULAR PLURALS IN ENGLISH  
NOUNS

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### **Poděkování**

Na tomto místě bych ráda poděkovala vedoucímu mé bakalářské práce Mgr. Petru Kosovi, Ph.D. za odborné vedení, pomoc a trpělivost při zpracování této práce.

## **Anotace**

Cílem této bakalářské práce je analyzovat výskyt pravidelné plurálové formy u anglických substantiv, která primárně tvoří nepravidelný plurál. Práce se nejprve zabývá zpracováním dostupných zdrojů k této problematice, ze kterých má vyplynout, jaký poměr jednotlivých forem se u vybraných substantiv vyskytuje. Výsledná data jsou následně zkoumána pomocí korpusu.

**Klíčova slova:** podstatné jméno; pravidelné množné číslo; nepravidelné množné číslo; korpusová analýza

## **Abstract**

The aim of this thesis is to analyse the occurrence of the regular plural forms of the nouns which typically follow the irregular plural pattern. The thesis first deals with the analysis of sources regarding the discussed subject. These sources will demonstrate the co-occurrence of regular and irregular plurals in substantives. Subsequently, data provided by theoretical sources are examined by using the corpus.

**Key words:** noun; regular plural; irregular plural; corpus analysis

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# 1 Introduction

Countable nouns in English follow two basic principles of plural forming. The majority of nouns form plural regularly whereas the rest of nouns take an irregular plural. However, language has not always strictly defined clear cut-boundaries between one category and another. The phenomenon of gradience also relates to the process of pluralization when the noun can follow both patterns of plural forming although it is primarily considered to take only the irregular plural form.

In order to discover, to what extent nouns, which are considered to take primarily an irregular plural according to the theoretical sources, namely, Dušková (1988), Quirk et al. (1985) and Huddleston (2002) but they can also form plural regularly, are accepted in their regular plural counterparts, the data provided by the grammars will be summarised and searched for in the British National Corpus and in the Corpus of Contemporary American English which represents the main regional varieties of English.

Subsequently, the phenomenon of co-occurrence of regular and irregular plurals will be observed in spoken and written registers which represent the varieties of language according to the medium and results will be compared in terms of frequency of particular plural form.

The main purpose of the research is to analyse the frequency of the regular and irregular plural form of nouns which are supposed to take either plural forms according to selected grammars with the real usage of these plural forms across the different language varieties which are represented by the corpus research. Subsequently, results obtained by the corpus research will be compared with those from grammar books to discover if there are any differences.



## 2 Grammatical categories of nouns

In terms of grammar, the noun is classified as one of the parts of speech. The part of speech represents a collection of words that all behave in a similar way and also follow the same inflectional rules according to grammatical categories (cf. Beck 4). Nouns have three grammatical categories, namely, gender, case and number which is a deciding factor for the further classification. In this respect, English distinguishes between “singular which is the unmarked form listed in dictionaries and plural form” (Quirk et al. 304) that will be looked at more closely in the following.

### 2.1 Formation of the plural

The plural in English can be expressed in various forms. Basically, we distinguish between two main types of plurals, namely, the regular and irregular plural.

The regular plural is represented by the abstract unit of grammatical meaning called bound morpheme that is expressed by three allomorphs, namely, /s/, /z/, and /ɪz/. Graphically, the regular plural is formed simply by the ending –s that is attached to the word base of the count noun. Although there are some exceptions by forming the plural, such as the phonological or spelling alternation by some instances of nouns, such as *bus* which has the base ending in a sibilant and therefore it forms the plural *buses* or *ability* which has the base ending in –y which changes in to –i so the plural form is *abilities* (cf. Huddleston 1585), in general, the regular plural form is predictable from the singular as in example of *dog* in singular and *dogs* in plural (cf. Quirk et al. 296–304).

On the other hand, some nouns do not use established patterns to indicate plurality and forming of their plural form is not predictable from the singular according to the regular plural inflection (cf. Quirk et al. 298). This latter group includes nouns that form plural in various irregular ways, such as modification of the base, base or also called zero plural, -en plural, mutation and foreign plurals of words borrowed from other languages, such as Latin, Greek and French (cf. Quirk et al. 305–312) which will be discussed in the following part.

## 2.2 Classification of irregular plurals

There is a range of nouns which do not usually take the regular plural ending *-s* and we can divide these nouns into particular groups where nouns are characterized with similar features and follow the same patterns of forming the plural within the group.

### 2.2.1 Base/zero plural

The first type of the plural is defined as base or zero plural. This type of the plural is not graphically indicated, which means, that nouns forming plural this way have the singular form same as the plural form as in the case of the noun *sheep* in sentences: “A sheep has escaped.”, “Two sheep have escaped” (Huddleston 1588). As in the mentioned examples, most of these nouns refer to the names of game and wild animals, but they can also refer to the nationality names and nouns indicating the number (cf. Huddleston 1588).

### 2.2.2 The *-en* plural

Another way of forming the irregular plural in English is the *-en* plural ending that is added to the end of the base. There are only three nouns that form plural this way: *ox*, *child*, and *brother*, in this case, only the first mentioned *ox* follows this pattern of pluralization directly by simply adding *-en* to the base. Regarding the second noun *children*, there is the addition of *r* accompanied by a vowel change in speech. *Brethren* is changed in both speech and writing (cf. Huddleston 1590).

### 2.2.3 Mutation

Another type of irregular plural forming is mutation. Nouns, which follow this type of pluralization, form the plural through a change in vowel structure, such as the example of *mouse* in the singular and *mice* in the plural. It is possible to divide these nouns into three groups according to alternations between a back vowel in the singular and a front vowel in the plural. The first group includes *foot*, *goose*, and *tooth* in the singular which change into *feet*, *geese*, and *teeth* respectively in the plural. *Man* and *woman* form the plural in the same way so they change the form into *men* and *women* respectively, and the last noun *louse* follows the same pattern of pluralization as the already mentioned *mouse* (cf. Quirk et al. 306).

#### 2.2.4 Modification of the base

Some nouns form the plural by adding the plural suffix but the addition of *-s* is accompanied by a modification of the consonant that is at the end of the base. The consonant that is represented by written *f* is changed into *v* as in the illustrative example of a word *calf* in singular and *calves* in the plural (cf. Huddleston 1587).

#### 2.2.5 Foreign plural

Foreign plural represents the last category of the plural formation that is considered as the irregular one. Nouns borrowed from other languages include mainly words taken from Latin, Greek, French and various other languages, such as Hebrew or Italian and unlike mentioned plural forms, they have plurals taken from those languages which then retain one common pattern (cf. Quirk et al. 311–313).

##### 2.2.5.1 Latin plurals

The majority of loanwords are Latin origin. As far as Latin plurals are concerned, Latin distinguishes four common patterns of plural forming according to the base ending of the particular nouns. There are nouns with bases ending in *-a*, *-us*, *-um*, *-ex* or *-ix* (cf. Huddleston 1591).

Words borrowed from Latin ending in *-a* in the singular take the ending *-ae* to indicate plural as the example of *alga* in singular which changes into *algae* in the plural. Nouns such as *larva*, *alumna*, *amoeba*, and others also form the plural according to this pattern (cf. Huddleston 1591).

The second group of nouns includes words that end in *-us* in the singular. These nouns change the ending of the base by using the plural inflection *-i*. The illustrative example is the word *cactus* in the singular which has the plural form *cacti*. There are exceptions regarding the words *corpus*, *genus*, and *opus* which do not belong in this group etymologically and form the plural in a different way. For example, *genus* has the plural form *genera* (cf. Huddleston 1591).

Another group of nouns of Latin origin includes nouns that form their plural by replacing *-um* ending by *-a* ending. There are nouns such as *addendum*, *bacterium*, *desideratum*, and others (cf. Huddleston 1591).

The last group including nouns borrowed from Latin refers to words which have bases ending either in *-ex* or *-ix* that is changed in the plural by ending *-ices*. The first group of nouns ending in *-ex* includes instances such as *apex*, *ibex*, *latex* and so forth. Concerning the nouns with the base ending in *-ix*, there are instances such as *cervix*, *helix* or *matrix* (cf. Huddleston 1592).

#### 2.2.5.2 Greek plurals

Nouns borrowed from Greek follow only two patterns of plural forming according to the base endings. Most nouns of Greek origin end in *-is* and follow the same pattern as *basis* which forms the plural by replacing the ending *-is* by *-es*. The rest of nouns borrowed from Greek include nouns that have a stem ending in *-on* that is changed in *-a* in the plural as in the case of *criterion* in singular and *criteria* in the plural (cf. Huddleston 1593).

#### 2.2.5.3 French plurals

Nouns of French origin have two types of pluralization. The first group of nouns includes words having bases ending in *-eau* or *-ieu* which form the plural by attaching the suffix *-x* to the base as in the case of *plateau* in the singular that has a plural form *plateaux*. There are others, ending in *-s* which have base plurals that are indicated by different pronunciation from singular (cf. Huddleston 1593).

#### 2.2.5.4 Other foreign plurals

Other languages, which left traces of foreign plurals in English, are for instance Hebrew, Italian, Arabic and others. Concerning the plural in Hebrew, there is the plural pattern illustrated in the example of Hebrew word *kibbutz* which forms the plural *kibbutzim*. As far as Italian loanwords are concerned, the perceiving of Italian plurals is different than other foreign plurals for words such as *paparazzi* and *graffiti* were borrowed into English as plurals so they are more perceived as singular forms (cf. Huddleston 1593).

### 3 The alternation between the regular and irregular plurals

There are nouns accepting foreign plural which do not strictly follow the irregular pattern of plural forming and can occur also with the regular inflection. This phenomenon occurs in nouns that form the plural by the modification of the base and nouns that are borrowed from foreign languages and follow the pattern of pluralisation of their original language as in the example of the word *aquarium* in singular and two forms of plural, namely, the regular plural form *aquariums* and the irregular plural form *aquaria* (cf. Huddleston 1587–1593).

Before the particular nouns concerning this phenomenon will be discussed, I will consider the possible reasons, why some nouns allow both the regular and also the irregular plural forms.

#### 3.1 Tendencies of language

There is one of the possible explanations why the irregular plural occurs along with the regular one, namely, that language changes because language tends to adapt to needs of a speech community, but members of a particular speech community, such as speakers of different regions, social classes or generations, have slightly different knowledge of their shared language and so they also use their language differently, which causes that language changes over time (cf. Fasold, Connor-Linton 289 – 290). One type of the language changes refers to the process of regularisation for “Languages are flexible, open, adapting systems, but they also exhibit many mechanisms for maintaining their integrity, in order to enable their speakers to continue to communicate efficiently throughout all those changes” (Fasold, Connor-Linton 289 – 290).

##### 3.1.1 Regularisation

Regularisation represents a common process concerning language change, which is shown by oscillation of regular and irregular plural forms. In other words, making regular relates to replacement of irregular forms in morphology or syntax (cf. Fasold, Connor-Linton 290). Regarding plural forming, nouns originally following the irregular pattern of pluralization incline to take the regular *-s* suffix.

The process of regularisation is more obvious in American English than in Standard English as the appreciable regularisation of the verb forms indicates (cf. Kovecses 190).

American speakers transform irregular verbs into regular ones on the contrary to British English which retains the irregular pattern.

Causes of language regularisation are also discussed in relation to language acquisition or second language acquisition. It is assumed that we learn easier a regular pattern than a pattern with lots of exceptions (cf. Fasold, Connor-Linton 290). Concerning this phenomenon, Pinker (1999) mentions the so-called the words-and-rule theory. Based on this theory, regular inflection (in this case –s plural ending marking the plural form) “is generated by a mental operation that combines grammatical variables productively” (Beret, Pinker 150). In other words, we learn the particular rule of forming plural which can be applied repeatedly. On the other hand, “irregular inflection consists of storing and retrieving lexical items directly” (Beret, Pinker 150). Concerning this process of learning, we have to memorize each lexical item separately. For example, the irregular plural form *mice* is stored as the plural form of *mouse* (cf. Beret, Pinker 150) so children prefer regular patterns and language tends to expunge irregularities over time (cf. Fasold, Linton 290). Nevertheless, there are irregular plurals still remaining in Standard English such as *feet*, *oxen* and others which do not show any tendency towards regularisation. It has been assumed that these words occur at a high rate so children are familiar with them and if a child makes a mistake such as *foots*, someone corrects it in all probability (cf. McMahon 73).

It is important to mention that language changes take place during the period of time and are marked as an ongoing process because there are other forces which periodically contribute to the introduction of the irregular novelties into a language which become regular after some time (cf. Fasold, Connor-Linton 290).

To examine, to what extent the process of regularisation influences nouns following the irregular pattern of pluralization and which concrete nouns allow both types of plural, the following chapter will discuss the information provided by the selected grammars concerning this category of nouns.

## **4 Theoretical base for the analysis**

The first major subject of the theoretical part of the research represents data which are presented in the following grammar books: Huddleston (2002) Quirk et al. (1985) and Dušková (1988) which discuss irregular plural inflection. These publications differ in approaches to the description of irregular plurals and offer different instances of nouns with oscillating plural form. In order to determine, which types of nouns allowing both plural forms or not, the mentioned grammars will be compared.

In terms of alternation of the regular and irregular plural, according to information provided by grammars, nouns are divided into groups according to following criteria: first category of nouns include instances that do not allow both plural forms, second group of nouns refers to those which are accepted with both plural forms, but the usage of particular plural ending causes the change of the meaning of the particular noun and the last group includes nouns that are accepted in both plural forms without changing the meaning.

### **4.1 Nouns allowing only irregular inflection**

It is important to mention that not all nouns follow both patterns of pluralization. There are three subtypes of irregular plurals, namely, base plurals, the vowel change plurals and the *-en* plurals that concerns with nouns which do not allow the regular form so the oscillation between regular and irregular plural ending cannot occur. These nouns are not relevant for the further analysis because we concentrate on the co-occurrence the regular and irregular plurals.

### **4.2 Irregular plurals with two forms having two different meanings**

There are also instances of nouns which follow both pattern of pluralization and one particular plural form bare different meaning than the other. This category of nouns includes only the instances of nouns which are borrowed from other languages. Generally, if a noun allows both plurals, “the irregular plural is preferred in scientific and technical genres or in more formal style whereas the regular plural is more natural in everyday use” (Huddleston 1590). The choice of the particular plural form often depends only on the context of use but the meaning of a word retains the same or differs only slightly from the original meaning.

Discussing the particular examples, Quirk et al. (1985) gives an instance of the expression *formulas* that is used in general and also makes reference to *formulae* by contrary and adds that this expression occurs in mathematics or linguistics.

There are other instances in which the choice of the plural form decides the meaning of a word such as *antenna*, *appendix*, *medium* and *index*.

In terms of the first mentioned instance, the Latin base indicates the connection of the meaning with electronics in case of regular inflection, irregular form of plural refers not only to the context of biology, but the expression includes the meaning of *antenna* generally as a medium of communication (cf. Quirk et al. 1985).

The similar situation concerns the example of the word *appendix*. Both meanings refer to "the rest of something" where the plural form *appendices* refers to extra information added to the end of the publication and the regular form concerns the part of the large intestine so the choice of the plural form strictly decides about the specific meaning.

Concerning the word *index*, Quirk et al. (1985) and Huddleston (2002) also distinguish meanings depending on the plural form. While the irregular plural *indices* refers to the usage in mathematics, the regular *indexes* mean parts of a book or other publication.

The last example refers to the word *medium* that is also used in a range of senses. The irregular plural *media* often causes the problem of classification in terms of plurality because it was brought into English as plural and the plural form of the word became naturalized in English so many perceive *media* as singular or mass noun. This fact has led to the clear distinction between the meanings depending on the particular plural form. The regular *mediums* refer to spiritualists and irregular *media* is used in a sense of "news media" concerning the range of meanings such as TV, radio or press. The meaning of particular plural forms indicates itself that the usage of irregular *media* is much more preferred in every-day English (cf. Huddleston 1992).

Although all these nouns allow both forms of plural, grammars provide a thorough explanation of the reason for the choice of particular plural ending.



### 4.3 Nouns with the oscillating plural ending

The crucial category includes nouns that allow both plural forms but grammars do not offer any explanation why there is an oscillation of the regular and irregular plurals. These nouns will be divided into categories according to the identical base ending and plural forming. Furthermore, each group of nouns is accompanied by the table that summarises the instances of nouns with the possibility of the oscillating plural ending given by grammars where the term both refers to the noun which is accepted in both plural forms. Those nouns that take either irregular or regular plural are determined according to their accepted plural form. The dash indicates that the particular grammar does not include the mentioned example.

#### 4.3.1 Nouns ending in the voiceless fricative

The first category of nouns with oscillating plural form consists of nouns which end in the voiceless fricative in the singular.

Example	Huddleston	Dušková	Quirk
dwarf	both	both	both
half	both	only irregular	only irregular
handkerchief	both	both	-
hoof	both	both	both
oaf	-	both	-
roof	both	only regular	only regular
scarf	both	both	both
turf	-	both	-
wharf	both	both	both

Table 1: Nouns ending in the voiceless fricative

According to the all above mentioned grammars, nouns *wharf*, *dwarf*, *hoof*, and *scarf* take both the voiced and regular plural form. Dušková (1988) and Huddleston (2002) add the example of *handkerchief*, which is also accepted with both plurals.

On the other hand, there are examples, such as *half* and *roof* taking both plurals according to Huddleston (2002) but based on Dušková (1988) and Quirk et al. (1985), the first noun is used only in the irregular plural form and the second instance follows the regular pattern of pluralization.

### 4.3.2 Bases ending in -a

Another group of nouns includes instances which have basis ending in *-a*.

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk</b>
amoeba	both	-	-
fibula	both	-	-
lacuna	both	-	-
nebula	both	only irregular	both
persona	both	-	-
retina	both	-	-
tibia	both	-	-
vertebra	both	-	both

Table 2: Nouns with bases ending in *-a*

In terms of quantity, the table shows that Huddleston (2002) mentions the highest number of instances with oscillating plural form in contrast to Dušková (1988) which gives only two examples meeting these requirements and does not admit the possibility of the regular plural by *nebula*. Information provided by Quirk et al. (1985) is comparable to Dušková (1988) with the exception of the already mentioned *nebula* which Quirk et al. (1985) states as the foreign noun with the possibility of both plural forms. Also the noun *vertebra* takes both plurals according to Quirk et al. (1985) and Huddleston (2002) with exception of Dušková (1988) that gives the noun only with the irregular plural.

### 4.3.3 Bases ending in -us

There are two possibilities of plural forming. The first group of nouns includes instances where the Latin plural of stems ending in *-us*, such as *cactus*, *focus*, *nucleus* and others (Huddleston 1591).

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
abacus	both	-	-
cactus	both	both	both
focus	both	both	both
fungus	both	both	both
hippopotamus	both	-	-
narcissus	both	-	-
nucleus	both	both	both
radius	both	both	both
stylus	both	-	-
syllabus	both	both	both

terminus	both	-	both
thesaurus	both	-	-
uterus	both	-	-

Table 3: Nouns with bases ending in *-us* I.

As far as these nouns are concerned, the same trend occurs in the group of nouns above mentioned. In terms of quantity of data, Dušková (1988) mentions the fewest instances of nouns taking both plurals in contrast to Huddleston (2002) but all presented examples are in agreement with the rest of grammars.

Example	Huddleston	Dušková	Quirk et al.
corpus	both	-	both
genus	both	only irregular	only irregular
opus	both	-	-
octopus	both	-	-

Table 4: Nouns with bases ending in *-us* II.

As can be seen from the table, all examples take both plurals according to Huddleston (2002). Dušková (1988) provides only one example which belongs to this category, namely, *genus* and states the noun only with the irregular plural. The same information about this noun is found in Quirk et al. (1985).

#### 4.3.4 Bases ending in *-ex* or *-ix*

The first group of nouns ending in *-ex* includes the instances, such as *apex*, *ibex*, *latex* and so forth, as can be seen in the table below.

Example	Huddleston	Dušková	Quirk et al.
apex	both	-	both
codex	both	-	only irregular
cortex	both	-	both
ibex	both	-	-
latex	both	-	-
vortex	both	-	both

Table 5: Nouns with bases ending in *-ex*

As was expected, Huddleston (2002) follows the typical trend and states more examples than the rest of grammarians. In this case, the phenomenon is supported by the fact that Huddleston (2002) does not mention the group of nouns taking only irregular plural and comments only on the rest of nouns including just a few instances that follow the

pattern of the regular inflection. There is a difference in perceiving the plural form of the word *codex*. Huddleston (2002) categorizes the noun with the possibility of both plurals whereas Quirk et al. (1985) restricts the choice of plural form only to the irregular one.

The second category refers to nouns with base ending in *-ix*, which is the case of words, such as *cervix*, *helix*, *matrix*, and *tortix* summarized in Table 6.

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
cervix	both	-	-
helix	both	-	-
matrix	both	-	both
tortix	both	-	-

Table 6: Nouns with bases ending in *-ix*

There is an only contrast in a number of instances between the grammars but all mentioned nouns are accepted with both plural forms according to Huddleston (2002).

#### 4.3.5 Bases ending in *-um*

This group of nouns includes the highest number of examples with oscillating plural form in general as the table below shows.

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
aquarium	both	both	both
candelabrum	both	-	both
curriculum	both	both	both
honorarium	both	-	-
maximum	both	only irregular	both
memorandum	both	both	both
millennium	both	-	both
minimum	both	only irregular	both
moratorium	both	-	both
plectrum	both	-	-
podium	both	-	both
referendum	both	-	both
spectrum	both	both	both
stadium	both	-	usually regular
stratum	both	only irregular	both
symposium	both	both	both
ultimatum	both	-	both

Table 7: Nouns with bases ending in *-um*

On the whole, Quirk et al. (1985) and Huddleston (2002) provide the most examples. On the other hand, Dušková (1988) again states the fewest examples. Furthermore, Dušková (1988) tends to prefer using the irregular form of plural by nouns, such as *maximum*, *minimum* and *stratum* in contrast to the rest of grammars. Quirk et al. (1985) is comparable with Huddleston (2002). They only slightly differ in the case of the example *stadium* that is used with both plural forms according to Huddleston (2002) but Quirk et al. (1985) provides the information about preference to regular inflection.

#### 4.3.6 Bases ending in *-on*

The grammars mention only two instances of nouns with both foreign and domestic plural forms. The grammars share the same information in the case of *automaton* that is considered as the noun with oscillating plural form. As far as the second instance of the noun with Greek plural *ganglion* is concerned, Quirk et al. (1985) prefers using this word with the regular plural.

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
automaton	both	both	both
ganglion	both	-	chiefly regular

Table 8: Nouns with bases ending in *-on*

#### 4.3.7 Bases ending in *-ieu* or *-eau*

The last mentioned group retaining the foreign plural together with an English plural regularly formed includes nouns of French origin.

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
adieu	both	both	both

Table 9: Noun with base ending in *-ieu*

<b>Example</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
beau	-	both	-
bureau	both	both	both
chateau	both	only irregular	-
milieu	both	-	-
plateau	both	both	both
tableau	both	only irregular	both

Table 10: Nouns with bases ending in *-eau*

Grammars share mostly the similar information concerning French plurals and mention words, such as *plateau*, *bureau*, *adieu* or *tableau* accepting both plural forms except Dušková (1988) that refers to *tableau* taking only the irregular *-x* ending and adds also the example of the noun *chateau* that Huddleston (2002) states with both plurals.

## **5 Research methodology**

Although grammars provide a list of nouns which allow both plural forms, there is no direct instruction for non-native speakers how to use the particular plural form in language usage. In order to have relevant data for language analysis and the subsequent comparative analysis with theoretical sources, the following part of research is concerned with studying language through the corpus, namely, “a collection of sampled texts, written or spoken, in machine-readable form which may be annotated with various forms of linguistic information.” (McEnery et al. 4)

The analysis of the co-occurrence of regular and irregular plurals in English follows the concepts from the theoretical sources, namely Dušková (1988), Quirk et al. (1985) and Huddleston (2002) from which the sample of studied noun was taken, in order to compare different approaches to the phenomenon of the plural alternation.

Subsequently, the selected nouns will be searched for in two various corpora which will be specified in the following and also the reasons will be explained why these particular corpora will be used for analysis.

Subsequently, these nouns will be categorized into groups according to data provided by corpus research which concerns with their frequency of usage in the plural generally and subsequent to results, nouns will be discussed in terms of the ratio of the regular to the irregular plural forms. The nouns, which occur in either regular or irregular plural forms based on the corpora, will be accompanied by particular extracts of corpora where the target expressions occur in order to examine if there are other aspects which could cause the preference of usage of particular plural form. Based on the results relating to individual instances, the general tendencies concerning the co-occurrence of regular and irregular plurals will be summarised and results will be illustrated in diagrams. Lastly, data provided by corpus research will be compared with those taken from theoretical sources.

## 5.1 The choice of corpora

There is no corpus which serves all purposes. Before analysing the nouns taking both plural forms, it is important to mention that nouns with oscillating plural endings occur in diverse varieties of English. Typically, we distinguish five major types of variation. For the purposes of the analysis, the three types of variation are discussed in terms of using the particular corpus, namely, “regional variation, varieties according to medium, and varieties according to attitude” (Quirk et al. 15–16).

In terms of regional varieties of English, we generally distinguish between Standard English and American English. For this purpose, the British National Corpus (BNC) was chosen as the corpus that is supposed to represent British English. The Corpus of Contemporary American English (COCA) is the second selected corpus that represents American English.

Generally, both corpora provide good sources of data but there are some differences between COCA and the BNC in terms of size and how recent they are. COCA contains approximately more than 560 million words of texts. Furthermore, the corpus is updated each year whereas the BNC includes 100 million words, which implies that COCA includes approximately five times more words than the BNC. As a result, the BNC offers the same expressions with lower frequency. (British National Corpus)

As far as the English varieties according to the medium are concerned, there are spoken and written register included in both mentioned corpora that provide data for further analysis. Concerning the size of the spoken register, the spoken section of the BNC includes around 10% of the data while the other 90% represent written texts (cf. McEnery 265). In the case of COCA, the spoken section consists of around 20% of data and the rest of data are written texts (cf. McEnery 265).

Concerning the varieties according to attitude, where we recognize between formal and informal language, there is no specialized corpora serving to this purpose but based on Bieber (1998) and his corpus-based study, American written genres are more informal whereas British written genres “tend to have the surface characteristics of prescribed writing.” (Granger 95) This could contribute to the fact that American English has higher tendency to regularise the irregular forms. For this reason, the BNC serve as a good source for data including irregularities that is important for the analysis of oscillating forms in comparison with data from the COCA.

## **5.2 The sample of nouns for analysis**

The sample of nouns which will be the subject of research has been extracted from the already discussed grammars, namely Dušková (1988), Quirk et al. (1985) and Huddleston (2002). The list attached in the appendix includes seventy instances of nouns on the whole which are considered to be accepted in either plural forms and the choice of the plural ending does not cause the change of their meaning based on the theoretical sources.

The sample of chosen seventy nouns was searched in both corpora the BNC and COCA and based on the results, nouns are categorized according to the following criteria which are specified below.

## **6 Comparative analysis**

Before categorizing nouns into groups according to their frequency of use, it is important to mention that “corpora treat words as atoms, in other words, as individual elements that represent instances of the same word consisting of identical sequences of letters or they are totally different” (Amstrong 128). The reason for this is that the “morphological variants of individual words are not appeared to be cognate to one another” (Amstrong 128). Concerning substantives, they might be expected to map onto nouns with the same number.

On the ground of this fact, firstly, nouns are treated separately as word forms with the irregular plural. Secondly, nouns are regarded as words with regular plural inflection. Resulting occurrence of both word forms of individual instances are added up and converted to the normalized frequency which shows the arithmetic count of the number of hits per 1 million words because the analysis is based on data provided by two different corpora that are not equal in size.

### **6.1 Nouns with very low frequency**

If nouns are relevant for the further research, their frequency of usage in the plural was determined by the frequency that is higher than 0,2 hits per 1 million words. In case of the BNC, the particular word should occur no less than twenty times in both plural forms in the particular corpus. Subsequently, the results are compared with the data taken from the COCA.



However, grammars provide lots of instances of nouns that are accepted with both plural forms, some of them occur only occasionally in the corpora so we are not able to determine the preferable plural form from results because the irregular plural to the regular plural ratio is very low. This phenomenon concerns words, such as *fibula*, *tortix*, *plectrum* and others. The sample includes twenty words in total and they are summarised in the table attached in the appendix.

## 6.2 Relevant frequency

Although the rest of nouns take both plural forms according to the information provided by the theoretical sources, it is possible to divide them into three groups based on data from corpora. The first category includes instances that follow the irregular pattern of pluralization according to both corpora. The second group includes nouns that are preferred by users taking the regular plural ending and the last category represents instances that occur in the particular plural form at a different rate in both corpora.

These nouns occur at a higher rate so it is possible to consider also data found in the spoken section of the particular corpus. On the grounds of the fact, each category of nouns is also accompanied by results that are provided by the spoken registers of both corpora and subsequently, results are compared with data taken from the whole corpora.

### 6.2.1 Preference of irregular plural form

This category includes the highest number of instances in comparison to others. Although all these nouns have rather the irregular plural ending than the regular one, there are some instances that are possible to be discussed in connection with the regular inflection. Taking account of the ratio of the regular plural form to the irregular one of these nouns, firstly, nouns follow the irregular pattern at a very high rate and they do not form plural regularly. Secondly, some nouns are accepted with regular *-s* ending but they are preferred as the irregular plural nouns.

#### 6.2.1.1 Nouns occurring rarely in the regular plural

Based on both corpora, nouns listed below are accepted only with the irregular plural form except the word *half* which belongs to the category of nouns which form the plural by modification of the base. All mentioned instances belong to the category of foreign plurals of Latin or Greek origin. The table shows the individual nouns accompanied by

occurrences of the particular instance in both plural forms. Figures refer to the number of hits of the specific plural form relating to the example mentioned in the left column.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
corpus	11	9	115	6
lacuna	23	0	78	3
vertebra	107	0	749	5
fungus	274	4	2090	8
narcissus	36	0	23	1
nucleus	229	0	1394	1
radius	48	0	180	7
terminus	47	1	50	0
helix	88	1	14	0
candelabrum	53	0	287	3
stratum	397	0	1048	1
symposium	35	6	111	4
ganglion	83	0	111	4
genus	191	0	565	2
opus	2309	0	12209	11
half	395	11	2385	11

Table 11: Nouns occurring rarely in the regular plural

As can be seen from the table, both corpora do not admit the existence or, in other words, the frequent usage of these nouns in the regular plural. Although nouns *radius* or *fungus* were found with the regular plural ending in the COCA, in relation to a high number of occurrences of the irregular plural forms of these words, regular *radiuses* or *funguses* are regarded as very rare expressions.

In terms of countability of nouns, there is a word *opus* which occurs at a very high rate in comparison with other instances. Data provided by the corpora showed that some users perceive the plural form *opera* rather as the singular than plural as shows the example found in the BNC.

[1] *If a great opera such as this has difficulty holding a place in the repertoire, what hope is there for the merely excellent?* (BNC)

As far as the data found in the spoken registers are concerned, many of these nouns do not occur in any plural form in the spoken sections of both corpora or they occur at a very low rate as in the case of nouns, such as *lacuna*, *terminus*, *genus*, and others.

On the other hand, this category also includes nouns that occur in the spoken registers. These words are listed in the table below.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
fungus	7	0	74	2
nucleus	8	0	11	1
candelabrum	1	0	40	0
stratum	4	0	45	0
vertebra	6	0	56	2
half	3	5	38	60
opus	77	0	1670	0

Table 12: Nouns accepting only irregular plural

As can be seen from the results, except the word *half*, the mentioned nouns do not take the regular plural ending according to the spoken registers. This fact has been already proved by search in the whole corpora where no entries correspond with these words if they are entered in the corpora in the regular plural form.

Comparing the data provided by the BNC and COCA, there are more instances of these nouns having irregular plural form in the COCA. The BNC provides a small number of hits in general. There is an exception relating to the word *opus*. The irregular *opera* occur at a considerably higher rate than other words in the spoken registers of both corpora. As was mentioned above, the expression *opera* is considered more as the singular than the plural form of the word *opus*.

Although some of these nouns occur in the irregular plural in spoken sections of both corpora, their frequency of usage is still very low.

#### 6.2.1.2 Nouns accepting both plural forms

Based on corpora, there are sixteen nouns which are preferred in the irregular plural form but they can also form plural regularly.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
nebula	24	1	993	47
cactus	42	7	504	135
matrix	247	2	748	23
vortex	41	4	217	49
curriculum	257	10	3577	308
maximum	69	8	316	50
memorandum	155	8	265	135
millennium	131	6	1619	93
spectrum	344	1	1252	62
automaton	38	12	165	118
beau	54	2	272	49

chateau	22	0	78	27
tableau	76	1	362	54
hoof	207	49	1451	168
scarf	177	6	1416	48
wharf	51	10	142	31

Table 13: Nouns accepting both plural forms

Although these nouns occur in both plural forms in the corpora, data summarized in the above table show that range of nouns included in this category are accepted with the regular ending only according to COCA. This phenomenon concerns nouns *nebula*, *matrix*, *spectrum*, *chateau* or *tableau* which do not occur in the regular plural according to the BNC but COCA showed the usage of these word forms. The most noticeable examples are *nebula*, *cactus*, *beau* and *tableau*. All these nouns are used exclusively with an irregular plural ending according to the BNC. On the other hand, COCA provided a great number of hits concerning these examples in the regular plural.

#### 6.2.1.2.1 Restriction of plural forms to genres

The group of nouns with oscillating plural form includes instances which have plural form occurring more frequent in the particular domain, in this case in the field of natural and pure science in the BNC and in academic writing in COCA. The following table summarises the frequency of nouns relating to these genres.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
nebula	15	0	199	7
cactus	12	1	50	3
vortex	32	0	80	1
maximum	43	0	93	10
memorandum	7	0	99	27
tableau	40	0	180	9
curriculum	26	4	3053	173
automaton	14	2	62	36
beau	1	0	56	5
chateau	0	0	7	5
hoof	11	6	45	17
scarf	0	2	106	2
wharf	3	0	22	11

Table 14: Irregular plural preferred in scientific genres

If we concentrate on the particular instances separately, the first expression *nebulae* occurs in the scientific language relating to the field of astronomy.

[2] *Full of excellent computer graphic techniques, and high resolution images of nebulae etc.* (BNC)

The regular *nebulae* were found only in the COCA. More than one fifth of the instances of the whole frequency of *nebulae* in the COCA refer to the collection of stories called Nebula Awards Showcase. The rest of examples of this word in regular plural also occur in the domain of pure science but the sources providing the term *nebulae* include mostly text types, such as fiction or magazines.

The usage of the preferable irregular plural form *cacti* is also restricted to the scientific context of natural science according to the BNC.

[3] *(Photosynthesis is carried out by the stem), e.g. heather, cacti.* (BNC)

The less frequent *cactuses* occur in the less formal language in prose as the example taken from the BNC shows.

[4] *On the opposite shelf stood my mother's collection of cactuses.* (BNC)

There is only one instance of the regular plural form of this word which appears in the context of science but it is negligible in comparison with the other examples.

Based on the COCA, the irregular *cacti* are also more frequent than the regular *cactuses* in the COCA but the difference between the number of hits relating to particular plural form is not so significant as in the BNC and on the contrary to the BNC, the irregular *cacti* occur not only in the scientific domain but many instances of *cacti* were used in the fiction prose.

[5] *It was summer in Phoenix and the garden featured hot gravel, immobile cacti, and dancing mirages.* (COCA)

Nice restriction of usage of the particular plural form depending on the level of formality of language is illustrated with the example also taken from prose.

[6] *Can you keep them in the car all day, anyway? Can cactuses -- or what the fuck, you call them cacti, Sarah, right?* (COCA)

The word *matrix* does not take the regular plural ending according to the BNC so there is no reason to provide individual examples of usage of this word in the context.

On the contrary, there are twenty-three hits referring to *matrixes* found in the COCA but based on the corpus, the word has multiple meaning as the following examples show so it is problematic to analyse the usage of the particular plural form without changing the meaning.

[7] *American society which no longer possesses a single core culture but much more diverse cultural matrixes.* (COCA)

[8] *In this sense, unit normal deviations, ratios, and error matrixes were formed.* (COCA)

The regular plural *vortexes* is also not used according to the BNC but COCA provides forty-nine instances of this word form which mostly occur in the text types, such as newspaper or magazines.

As far as the irregular plural form of this word is concerned, there are more hits provided by the corpus. Although the irregular plural *vortices* also occur in the same sources of texts as the already mentioned *vortexes*, the majority of hits referring to *vortices* were found in academic writing or scientific publications concerning the field of mechanical engineering, astronomy, bioscience etc.

The occurrence of *curricula* and *curriculumms* contradicts the expected phenomenon of preference of irregular plural form in more formal language. Based on the COCA, the great number of hits referring to irregular plural form belongs to the category of academic writing. The regular *curriculumms* also appear at a high rate in this type of writing.

Concerning the plural forms of the word *memorandum*, the regular *memorandums* were found quite often in the COCA query, although the irregular *memoranda* and regular *memorandums* occur in a ratio of 2:1. The regular plural form of this noun is very often used in the newspaper on the contrary to *memoranda* that also appear in this type of medium but there are many instances found in the COCA, that were used in academic writing.

Although the following expressions *millennium* and *spectrum* were found in both plural forms, the number of hits referring to their irregular plural forms is much higher than the number of their regular plural forms in the COCA.

In case of the word *maximum*, the regular plural form is used in most cases in magazines and newspaper and the irregular *maxima* were found in the more formal language of academic writing including for example the publication “Computer in Biology and Medicine”.

An exception represents the word *automaton*. Although it is preferred in irregular plural form, the regular plural form of this noun is also possible and there is not so significant difference between the numbers of both plural forms according to both corpora. Furthermore, the regular plural *automatons* are more frequent in academic writing than in other types of texts. The usage of the irregular plural *automata* follows the expected trend so the irregular plural form is preferred in the academic field.

Regarding the noun *beau*, the irregular plural *beaux* occur in various text types in the COCA so there is no restriction to the particular genre. The regular plural *beaus* are mostly used in fiction and there are only five hits found in academic writing based on COCA.

The word *chateau* illustrates another example of the noun which occurs in both plural forms but there is no significant distinction between the frequency of regular and irregular plural form in COCA. On the other hand, the BNC query does not provide any example of *chateaus*. Concerning the usage of the particular plural form depending on the context, there is no clear distinction between the usage of irregular *chateaux* in the more formal language of academic writing and the regular *chateaus* which should occur more often in the text types, such as newspaper or magazines.

As far as the usage of *tableau* in plural form is concerned, the irregular plural form is preferred to the regular plural as the results from the BNC show. The regular plural *tableaus* is acceptable only according to COCA. The frequency of *tableaux* is higher in academic writing than in other text types. The regular plural of this noun is mainly used in fiction.

The usage of *hoof* and *scarf* in the plural is similar in terms of text types. Both expressions occur in both plural forms at a high rate in fiction or magazines and there is a low number of hits found in academic writing according to the COCA.

Lastly, the irregular plural *wharves* occur at a higher rate in fiction than in academic writing and the regular plural *wharfs* is preferred in academic writing.

Concerning the data found in the spoken register, there are nouns, such as *corpus*, *nebula*, *cactus*, and other which do not occur or occur at a very low rate in the spoken sections of both corpora. Words, which are worthy of notice in terms of frequency in the spoken register, are presented in the table below.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
matrix	13	1	8	0
vortex	0	0	15	7
curriculum	5	0	86	10
memorandum	1	1	37	0
millennium	0	0	82	10
spectrum	0	0	11	14
automaton	0	0	0	10
half	38	3	60	5
hoof	5	2	28	6
scarf	10	2	127	4

Table 15: Nouns accepting both plural forms

The search in the spoken register shows the expected trend in favour of the preference of using these nouns in irregular plural form but only data found in COCA showed this trend. According to the BNC query, these nouns almost do not occur with the regular plural ending in the spoken section of the BNC with the exception of the word *matrix* which appears thirteen times in the BNC.

### 6.2.1.3 Preference of regular plural form

There are only eight nouns that are more often used with the regular plural ending than in the irregular plural form according to the data provided by both corpora. Although nouns take primarily the regular plural, their usage in irregular plural form is not so rare.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
retina	8	31	3	139
ultimatum	4	16	3	133
focus	132	649	415	9211
referendum	30	83	160	240
octopus	11	29	55	268
dwarf	56	285	348	1312
handkerchief	12	87	1	417
roof	5	653	1	2919

Table 16: Nouns preferring the regular plural



As can be seen from the table, the nouns *retina*, *roof*, and *ultimatum* are almost not used in the irregular plural forms according to both corpora. It is possible to add also the irregular plural form *handkerchieves*, however, it occurs in the BNC at a low rate. Furthermore, there are not any hits referring to *handkerchieves* found in COCA. The rest of nouns are accepted in both plural forms but according to the search in COCA, the regular plural form of these words is much more preferable.

Concerning the individual nouns, the word *focus* is difficult to analyse in terms of frequency of the preferable plural form because the expression *focuses* can refer either to the plural form of *focus* or to the verb *focus* in the third person singular. This expression occurs at a high rate in both corpora so we are not able to simply decide about the preferable plural form and therefore this word will be not discussed in the further analysis.

As far as the plural forms of the noun *referendum* are concerned, the usage of the the irregular plural *referenda* is restricted to the formal language of academic writing whereas the regular plural *referendums* occur at a high rate in newspapers or magazines based on the results provided by both corpora.

On the contrary, the noun *octopus* does not follow the same pattern of usage of the particular plural form depending on the formality of language or genre. The irregular plural *octopi* occur mainly in fiction according to the BNC and COCA. The regular plural form is often used in the scientific genre as biology as the extract taken from the corpus illustrates.

[9] *A few molluscs, like the slugs and octopuses, have secondarily lost their shells, having developed other means of protection. (BNC)*

Concerning the data provided by a spoken register, with the exception of the word *retina*, spoken registers of both corpora provided some examples of these nouns as can be seen from the data summarised below show.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
retina	0	0	0	1
ultimatum	0	0	1	47
focus	0	4	4	684
referendum	0	0	33	33
octopus	0	7	0	0
dwarf	1	21	14	82
handkerchief	0	5	0	21
roof	0	30	0	270

Table 17: Nouns preferring the regular plural

The results found in the BNC follow the recurrent trend. The BNC did not find any example of these nouns in the irregular plural form except the expression *dwarves* that occurs once in the corpus. As far as the regular plural forms of these nouns are concerned, the BNC provided some instances of the expressions *focuses*, *octopuses*, and *roofs*.

Concerning the results of COCA query, there are more instances of plural forms of these words in comparison with the BNC. On the whole, COCA prefers usage of these nouns in regular plural form but there is the instance of the word *referendum* which occurs in both plural forms to the same degree according to the COCA query. The most conspicuous number of hits relates to the expression *focuses* that occur at a very high rate in the spoken section of the COCA but how was mentioned above, the number of hits refers also to the verb *focus* in the third person singular.

#### 6.2.1.4 Different preference depending on the particular corpus

Some nouns occur in particular plural form at a different rate depending on the corpus which was used. Many of these nouns are rather preferred having irregular plural form in the BNC and regular plural in COCA. On the contrary, there are two nouns that were found retaining the irregular plural form at a higher rate in the COCA than in the BNC corpus which showed the contradictory trend.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
amoeba	16	5	27	102
persona	44	14	253	358
thesaurus	48	3	8	17
aquarium	83	48	46	394
minimum	63	3	113	339
milieu	19	5	31	78

plateau	49	27	8	268
stadium	63	58	39	1464
bureau	374	52	11	914

Table 18: Nouns preferred in irregular plural according to the BNC

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
syllabus	11	231	352	26

Table 19: Nouns preferred in irregular plural according to the COCA

This category is quite interesting on a number of counts. Concerning the preference for the particular plural form, except *syllabus*, all these nouns take rather the regular plural ending according to COCA. Based on the BNC, all these nouns follow rather the irregular pattern than the regular one with the exception of the word *stadium*. Based on the BNC, the word is used in both plural forms to the almost same degree. On the other hand according to COCA, the plural form *stadiums* occurs much more frequently than irregular *stadia*.

As far as the spoken sections of the corpora are concerned, the results are not surprising because there are some nouns which do not occur in any plural form or occur at a very low rate in the spoken register, such as *amoeba*, *thesaurus*, and *milieu*. The table includes the instances of words that appear in the spoken part of both corpora.

There are six examples of nouns included in this category that appear in the spoken section at least of one particular corpus.

Example	BNC		COCA	
	Irregular	Regular	Irregular	Regular
persona	0	0	4	34
aquarium	1	1	0	37
minimum	0	0	0	76
plateau	0	10	0	0
stadium	3	3	7	228

Table 20: Different preference depending on the particular corpus

As was expected, these nouns rarely appear in the plural forms in the spoken section of the BNC. The same trend relates to COCA but only in the case of the irregular plural form of the mentioned nouns. On the other hand, the COCA query showed a relatively frequent occurrence of these words with the regular plural ending. The most noticeable results refer to the word form *stadiums* which occurs at a high rate in COCA but only

three hits were found in the BNC. There is an exception concerning the word *plateau* which was not found in any plural form in the COCA.

### 6.3 Summary of results

Considering the results provided by both corpora, it is possible to notice some tendencies in general but also across the varieties of language, such as “regional variation, varieties according to medium, and varieties according to attitude” (Quirk et al. 15–16) in which nouns with oscillating plural form occur and the frequency of particular plural form differs depending on the language variety in which the particular plural form can appear.

#### 6.3.1 Overall tendencies in both corpora

On the whole, fifty instances of nouns with the possibility of taking both plural forms were entered in corpora and results showed the particular tendencies, which are described in the following.

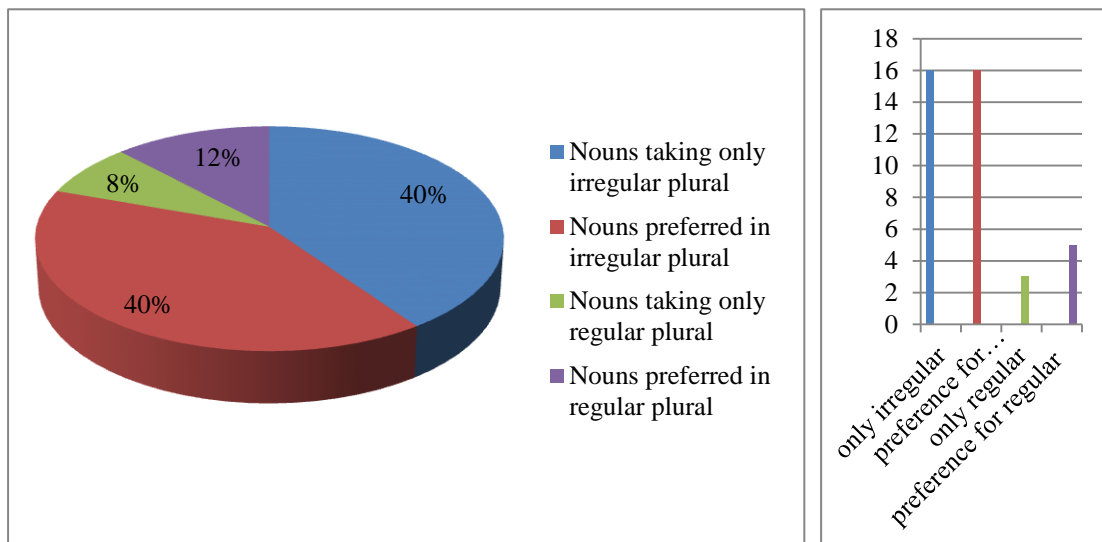


Figure 1: Total frequency

Figure 2: Number of nouns

As the final results show, there are two main tendencies concerning the frequency of particular plural form. Firstly, 16 instances of nouns (40%) are accepted only in the irregular plural form. Secondly, 16 instances of nouns (40%) also follow rather the irregular pattern of the plural inflection, however, they can also form plural regularly. The frequency of nouns which take rather the regular plural ending is noticeably lower. There are only three nouns (8%) which are accepted only in the regular plural form and

the last five nouns (12%) admit either plural forms but their regular plural variant is more frequently used.

Basically, it is possible to observe two main tendencies in terms of frequency of regular and irregular plural forms. Firstly, the majority of discussed nouns take rather the irregular plural form than the regular plural ending according to both corpora. The rest of nouns follow rather the regular pattern of pluralization. There is also a group of nouns which do not generally follow either regular or irregular patterns of pluralisation, and their preference for particular plural form depends on the choice of corpus and so we are not able to classify them according to following the particular pattern of pluralisation in general, so this category of nouns will be discussed later.

Considering the general tendencies of language in terms of regularisation, the corpus research confirmed only slightly the presupposition of regularisation of irregular plural forms. Although the majority of analysed nouns is accepted in both plural forms, only 20% of nouns with oscillating plural form follow rather a regular pattern of pluralisation than their irregular plural infection, furthermore, the noun *focus* is debatable in terms of high frequency of its regular plural form because the high number of hits refers not only to the regular plural *focuses* but also to the verb *focus* in the third person singular so it is difficult to decide about the preferable plural form.

### 6.3.2 Overall tendencies in COCA and the BNC

How was already mentioned above, there are 20% of nouns that occur in the particular plural form at a different rate in each corpus. It indicates that the frequency of usage of the particular plural form differs in terms of regional varieties of English, namely, Standard English and American English.

Although both regional varieties of English have undergone significant regularisation due to dialect and language contact, the process of regularisation is more considerable in American English which includes more examples of regularities in verb or noun inflection (cf. Filppula 313). The search in COCA query confirmed this fact for it provides nine instances of nouns taking rather the regular plural ending which are considered to follow rather an irregular pattern of pluralization according to the BNC. There is only one exception. The word *syllabus* form rather plural regularly based on

the BNC but COCA provided a higher frequency of the irregular plural form *syllabi* than of its regular counterpart *syllabuses*.

Furthermore, concerning the subcategory of nouns which are preferred in their irregular plural variant according to both corpora, nevertheless, they can follow the regular pattern of plural, the COCA query provided appreciably higher frequency of the regular plural forms of these nouns than the BNC query that did not even present many of these nouns in the regular plural form at any rate as can be seen in the following diagram. The frequency of the plural form of *matrix* is not included because both corpora showed that this noun has multiple meaning.

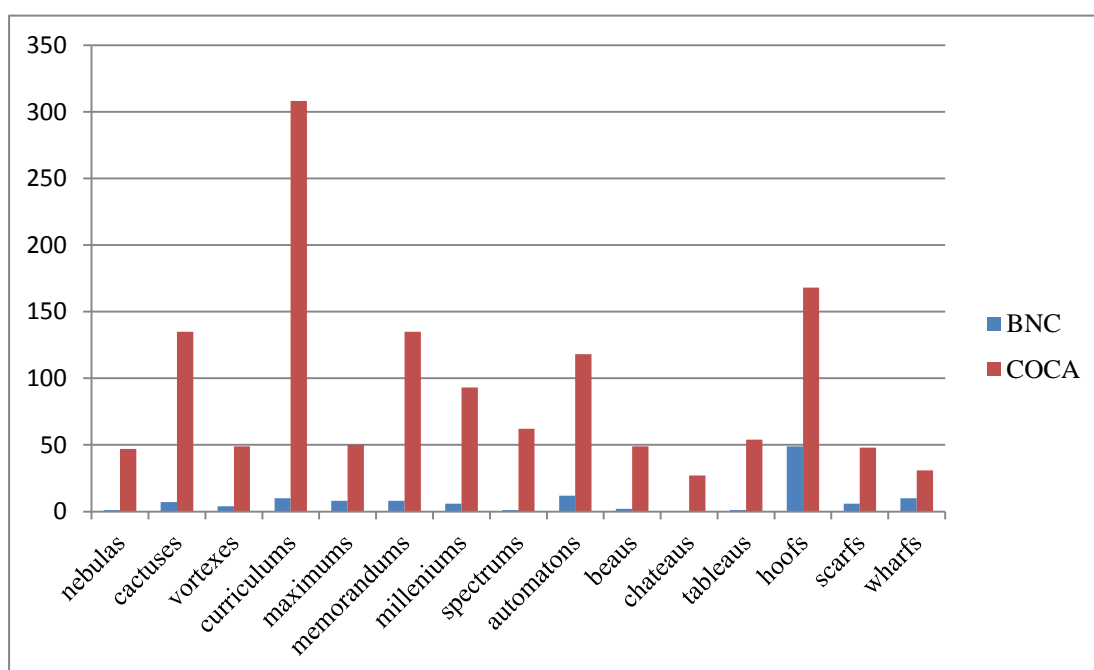


Figure 3: Frequency of the regular plural forms of nouns preferred in irregular plural forms

Based on the statistical data concerning the frequency of certain expression, almost all instances do not take the regular plural ending or the frequency of their regular plural forms is very low according to the BNC. There is an exception of the word *hoof* which occurs in their regular plural variant but COCA provided the considerably higher frequency of the expression *hoofs*.

### 6.3.3 Overall tendencies in spoken and written registers

The frequency of the particular plural form can be also observed in the spoken and written registers of corpora. Basically, spoken corpora of the BNC query constitutes only 10 % of the whole corpus and as far as COCA corpus is concerned, the spoken register represents 20% of the whole COCA. Consequently, most of the examined nouns do not occur in the spoken section of any corpora or the corpora queries proposed a very low number of hits referring to these nouns for they constitute an only small part in case of both corpora.

On the other hand, there are also some nouns which occur in the spoken section of the corpora. Basically, these nouns follow the expected phenomenon based on the frequency of their plural forms in the written register. Nouns which are preferred in the irregular plural form but they can also form plural regularly and vice versa according to the search in the written registers of both corpora, they usually occur in the spoken section of the particular corpus in their preferable plural form. The majority of nouns confirmed this phenomenon for if they occur mostly in the irregular plural form in the written register of the particular corpus, their irregular plural variants are more frequent in the spoken register than their regular counterparts.

There are some exceptions which do not follow this trend, such as *radius*, *spectrum*, *symposium*, and *automaton*. Although all these nouns occur at significantly higher rate in the irregular plural form in written registers of both corpora, the spoken register of COCA provided all these instances with higher frequency in the regular plural despite the fact that they mostly form plural irregularly based on the written sections of both corpora, however, the search in the spoken register of the BNC did not confirm the preference of the regular plural form of these words. The following diagram includes only the frequency of plural variant of these nouns in COCA because the BNC query provided any hits of plural variants of these words in the spoken section.

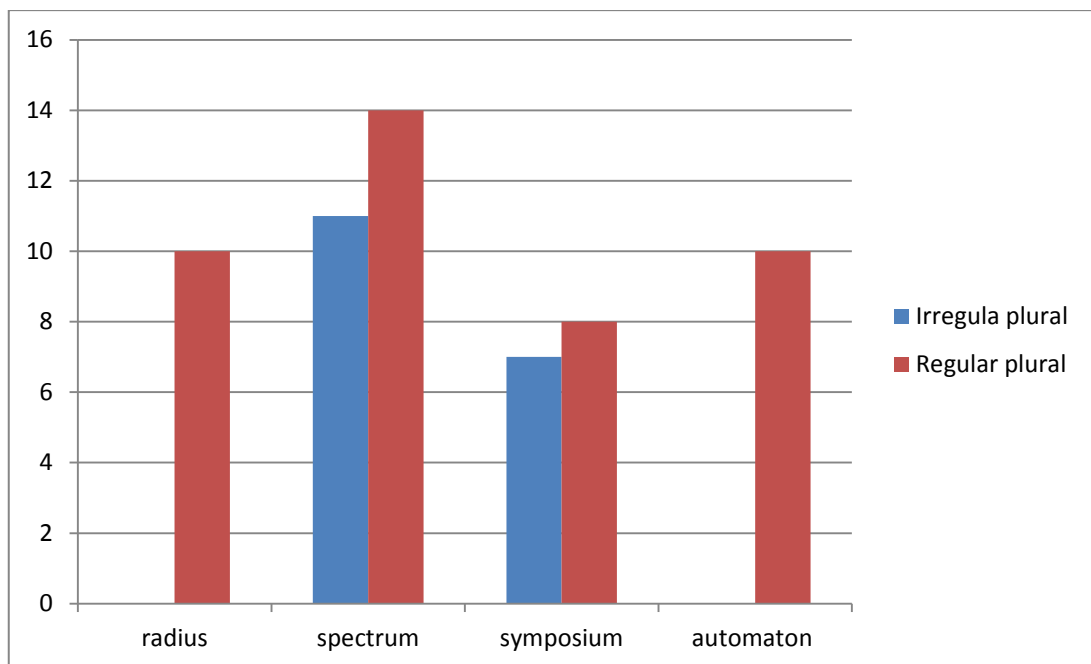


Figure 4: Frequency in the spoken query of COCA

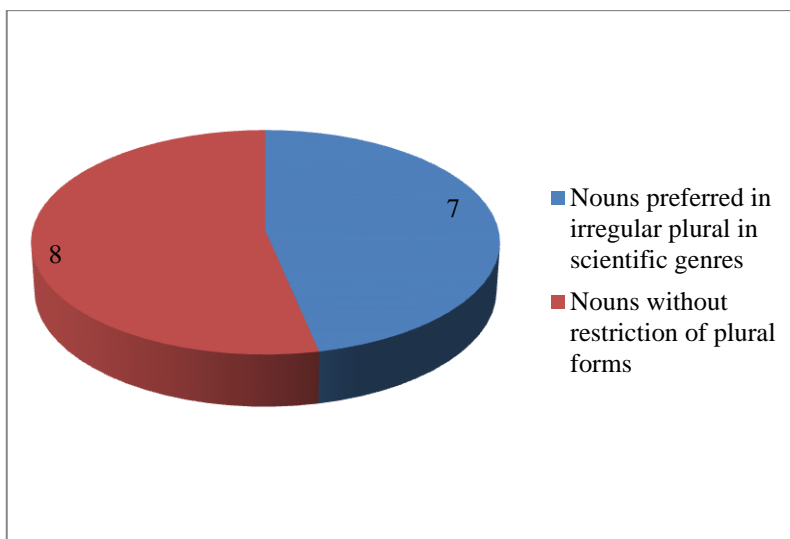
As the figure shows, the irregular plural forms of these nouns are less frequent than their regular plural variants, furthermore, the irregular plural forms *radii* and *automata* do not occur at any rate in the spoken query of COCA.

#### 6.3.4 Level of formality

The last tendency regarding the choice of particular plural form, which can be observed based on the corpora research, is the preference for usage of the particular plural form depending on the type of genre or degree of formality of language in which the plural form of a noun is used. This phenomenon can be studied by nouns which are acceptable in both plural forms based on the corpus research although the usage of one of their plural forms is preferable.

Based on the corpora research, there are fifteen instances of nouns in total which are more frequent in particular plural form based on both corpora but their second plural alternative is also possible so we are able to observe some tendencies in terms of usage of the particular plural form in specific genres. The following diagram illustrates the preference of the particular plural form depending on the text type in which the noun occurs.





As can be seen in the figure, there are two categories which comprise the same number of nouns so there are two main phenomena that can be observed by nouns with the oscillating plural form occurring in different text types of a specific degree of formality.

Firstly, the research showed that the degree of formality of language used in the specific fields can influence the choice of particular plural form and almost a half of nouns follow this phenomenon. These nouns are acceptable in both plural forms but their irregular plural forms are much more likely to be found in more formal language or in scientific genres whereas their regular plural forms occur more often in common language. This category of nouns includes instances such *cactus*, *nebula*, *vortex*, *maximum*, *memorandum*, *referendum*, and *tableau*.

Considering these nouns, except the word *tableau*, which has French origin, all these instances have been borrowed from Latin which was considered to be the international language of scholarship and it bears the label of scientific language to this day on the contrary to French language which was considered as the language having social and culture prestige so the French loanwords often relate to field, such as fashion, art or social life whereas originally Latin words mainly occur in the scientific language of medicine, mathematics or biology. (cf. Gunnarsson 6–7)

Concerning the nouns *cactus*, *nebula*, and *vortex* they were originally employed in the language as the examples of particular terminology. Taking into consideration the first mentioned *cactus*, its meaning refers exclusively to a particular type of plant which

occurs mainly in the context of botanic or biology. The latter *nebula* denotes more abstract thing which can occur strictly in scientific context concerning astronomy because there is no another word which refers to such a thing. Similarly, the noun *vortex* was originally part of the specific language used in meteorology but today, it can bear a literary meaning refers to “a very powerful feeling or situation that you cannot avoid or escape from.” (OLAD)

On the other hand, although words such as *minimum*, *memorandum* and *referendum* are employed in a different context than the above-mentioned nouns but their irregular plural forms restricted to the formality or specificity of language can be explained with this concept.

The last example of this category *tableau* follows rather the irregular pattern of plural forming, however, there is a different reason for that. On the contrary to the mentioned words, *tableau* has been borrowed from French, which its meaning indicates for it relates to art.

On the other hand, the second group of nouns, including *beau*, *chateau*, *hoof*, *scarf*, *wharf*, *octopus*, *curriculum*, and *automaton*, does not confirm this “rule”. Although they are also used in both plural forms, the usage of the particular plural form is not conditional on the formality of language or type of text in which the particular noun occurs. This category of eight nouns comprises five words of the foreign origin and three nouns common used in English where the restriction of the irregular plural to scientific or more formal language is not presumable.

The words of French origin *beau* and *chateau* follow the same phenomenon as has been mentioned before relating to *tableau*. Both refer to issues which were used to be familiar to French aristocracy and they retain in their original form, however their plural forms have been anglicized.

Although the rest of nouns are borrowed from Latin and Greek, the restriction of their irregular plural forms was not confirmed by the corpus research.

## 7 Corpora versus theoretical sources

To verify to what extent the information provided by grammars differs from the results based on the corpus research, this chapter summarises the correspondence of data provided by theoretical sources and corpus analysis but it also discusses discrepancies relating to data obtaining by both sources.

Based on the theoretical sources, namely Dušková (1988), Quirk et al. (1985) and Huddleston (2002), all discussed nouns are potentially accepted in both plural forms at least according to one mentioned grammar book. The corpus research proved that thirty instances of nouns confirmed this fact. Sixteen nouns of them, namely, *cactus*, *matrix*, *curriculum*, *memorandum*, *spectrum*, *automaton*, *tableau*, *hoof*, *scarf*, *wharf*, *focus*, *dwarf*, *aquarium*, *syllabus*, *bureau*, and *plateau* are provided by all grammars with the possibility of taking both plural forms.

However, concerning the further nouns, each grammar book provides a different number of instances which are able to accept both plural forms and these examples are summarised in the following table.

Example	Corpus research	Huddleston	Dušková	Quirk et al.
vortex	both	both	-	both
millennium	both	both	-	both
referendum	both	both	-	both
beau	both	-	both	-
octopus	both	both	-	-
amoeba	both	both	-	-
persona	both	both	-	-
thesaurus	both	both	-	-
milieu	both	both	-	-

Table 21: Comparison based on particular instances

Nouns *vortex*, *millennium*, and *referendum* are mentioned only in Quirk et al. (1985) and Huddleston (2002) but Dušková (1988) does not provide any information about them so it is not possible to decide whether they follow rather regular or irregular pattern of plural forming according to this grammar book and these instances are illustrated in the following table.

The noun *beau* is provided only by Dušková (1985) as well the words *octopus*, *amoeba*, *persona*, *thesaurus*, and *milieu* are given only by Huddleston (2002) whereas the other grammars do not provide any information about these nouns in terms of plural forming.

Furthermore, if we come back to already mentioned instances of nouns, which occur at a very low rate in the corpora so it is not possible to analyse them in terms of preferable plural form, only Huddleston (2002) provides all twenty instances in contrast to other grammars.

On the other hand, there are also instances of nouns which follow a different pattern of plural forming than they should take according to the information provided by the grammars. Furthermore, the grammar sources differ in particular cases from one to another. The most illustrative examples are summarised in the following table.

<b>Example</b>	<b>Corpus research</b>	<b>Huddleston</b>	<b>Dušková</b>	<b>Quirk et al.</b>
half	usually irregular	both	irregular	irregular
roof	regular	both	regular	regular
nebula	usually irregular	both	irregular	both
genus	irregular	both	irregular	irregular
maximum	usually irregular	both	irregular	both
stadium	both	both	-	usually regular
stratum	irregular	both	irregular	both
ganglion	irregular	both	-	chiefly regular
chateau	usually irregular	both	irregular	-
minimum	both	both	irregular	both

Table 22: Comparison based on preferable plural form

Although the mentioned nouns (except *minimum* and *stadium* which take either regular or irregular plural forms) incline to take only one particular plural form based on the corpus research, Huddleston (2002) mentions all these examples with the possibility of accepting both plural forms whereas Quirk et al. (1985) and Dušková (1988) state these nouns in their preferable plural forms as in the case of the nouns such as *half*, *nebula*, and *genus* which should follow only irregular pattern of pluralization according to Quirk et al. (1985) and Dušková (1988) and also the search in the corpora confirmed the preference of this noun in the irregular plural form. The same phenomenon concerns other instances which are supposed to take either irregular or regular plural forms based on Dušková (1988), which also the corpora confirmed.

On the other hand, although all these instances, with exception already mentioned *stadium* and *minimum*, take rather one particular plural form, their plural counterparts have also occurred in the corpora, however, their frequency was low.

There is only one instance of the noun which occurs in the different plural form in the corpora than it is mentioned in the grammars. This phenomenon concerns with the noun *ganglion* which forms plural truly irregular based on the corpus research but according to Huddleston (2002), it should also be accepted in regular plural form, furthermore, based on Quirk et al. (1985), the plural form *ganglions* is even preferable than the irregular *ganglia*.

In conclusion, it is possible to observe some general tendencies in terms of approaches of each grammar to the phenomenon of the co-occurrence of the regular and irregular plurals.

Concerning Huddleston (2002), it includes the highest number of instances of alternation between regular and irregular plural forms. Although some of these nouns are not truly grammatically wrong in either the regular or irregular plural forms, language users perceive them unnaturally or not generally used.

As far as Quirk et al. (1985) and Dušková (1985) are concerned, they mention obviously fewer instances of nouns with the oscillating plural form but on the other hand, they state instances of nouns with determined plural forms which correspond with data provided by the corpus research.

Lastly, although information based on the grammars does not strictly correspond with data obtained by corpus research, the diversity between the comprehending the phenomenon of co-occurrence of the regular and irregular plurals in English nouns from perspective of both theoretical and practical sources is not so substantial.

## 8 Conclusion

This thesis was concerned with the phenomenon of co-occurrence of regular and irregular plurals of nouns which allow both plural forms according to the theoretical sources.

The first part of the thesis provided a brief outline of the general concept of plural forming in English. It discussed basic types of plurals and also regular and irregular plural inflection and subsequently, types of irregular plural forming, namely, base/zero plural, mutation, nouns with modification of the base, and foreign plural were described in a more detailed way. Furthermore, nouns, which typically follow the irregular pattern of pluralization but they can also form plural regularly, were discussed in connection with information based on Dušková (1988), Quirk et al. (1985) and Huddleston (2002) and also with the background and possible reasons why the English language tends to regularise irregularities.

For the corpus analysis, 70 nouns with oscillating plural form based on the theoretical sources were chosen. Each noun was entered in the British National Corpus and the Corpus of Contemporary English. Subsequently, according to the results, nouns were first divided into two groups according to the frequency of usage in a plural form in general. Nouns occurring at an analysable rate in the plural form were classified in the following categories: acceptance of only irregular plural, preference of irregular plural with the possibility of regular plural variant, preference of regular plural and preference of particular plural form depending on the choice of the corpus. Consequentially, each category was discussed in a more detailed way providing the relevant frequencies.

The results were summarised and discussed in terms of general tendencies which could be observed across particular language varieties, namely, regional variation, varieties according to the medium and varieties according to the attitude in which the co-occurrence of regular and irregular plurals appeared. Consequentially, the resulting tendencies were compared with the expected phenomena concerning the degree of regularisation relating to each particular language variety.

Lastly, results based on the corpus research were compared with the information provided by grammars which primarily constituted the basis for the corpus research.

The results were firstly discussed in terms of the correspondence between data provided by theoretical sources and corpora. Subsequently, results were compared concerning differences between grammars and the data taken from corpus research.

In conclusion, the research confirmed only slight language tendencies concerning the process of regularisation. Generally speaking, the majority of nouns with oscillating plural form were preferred in their irregular plural variants based on the corpus research. However, some nouns have been anglicised and follow rather the regular pattern of pluralization.

As far as the varieties of language are concerned, the co-occurrence of regular and irregular plural forms occurred in both regional variants, namely, in American and Standard English. The corpus research proved that American English includes fewer irregularities than Standard English regarding nouns with oscillating plural form.

The expected tendencies have been also proven in terms of language varieties according to the medium. The spoken register of both corpora provided the generally higher frequency of nouns in regular plural than in their irregular counterparts, however the frequency of particular instances occurred generally at a low rate in the spoken sections of both corpora for the spoken register represents only small part of the whole corpus on the contrary to the written register which includes the noticeably higher number of words.

Subsequently, the corpus research showed that the degree of formality of language can have the influence on the choice of particular plural form relating to the words of Latin origin where the irregular plural is restricted to the scientific genres and the regular plural form occurs more often in common language.

Lastly, the comparative analysis of the data provided by grammars and the corpus research confirmed that in most cases, information provided by grammars and data taken from the corpus research do not significantly differ, however, none of the selected grammars did provide a perfect instruction of using particular plural forms.

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## Appendix

Table 23: Sample of nouns for the corpus analysis

EXAMPLE	HUDDLESTON	DUŠKOVÁ	QUIRK
<b>Bases ending in voiceless fricative</b>			
dwarf	dwarves – dwarfs	dwarves – dwarfs	dwarves – dwarfs
half	halves – half	halves	halves
handkerchief	handkerchieves – handkerchiefs	handkerchieves – handkerchiefs	–
hoof	hooves – hoofs	hooves – hoofs	hooves – hoofs
oaf	–	oaves – oafs	–
roof	rooves – roofs	roofs	roofs
scarf	scarves – scarfs	scarves – scarfs	scarves – scarfs
turf	–	turves – turfs	–
wharf	wharves – wharfs	wharves – wharfs	wharves – wharfs
<b>Bases ending in a</b>			
amoeba	amoebae – amoebas	–	–
fibula	fibulae – fibulas	–	–
lacuna	lacunae – lacunas	–	–
nebula	nebulae – nebulas	nebulae	nebulae - nebulas
persona	personae – personas	–	–
retina	retinae – retinas	–	–
tibia	tibiae – tibias	–	–
vertebra	vertebrae – vertebrae	–	vertebrae - vertebrae
<b>Bases ending in us</b>			
abacus	abaci – abacuses	–	–
cactus	cacti – cactuses	cacti – cactuses	cacti – cactuses
focus	foci – focuses	foci – focuses	foci – focuses
fungus	fungi – funguses	fungi – funguses	fungi – funguses
hippopotamus	hippopotami – hippopotamuses	–	–
narcissus	narcissi – narcissuses	–	–
nucleus	nuclei – nucleuses	nuclei – nucleuses	nuclei – nucleuses
radius	radii – radiuses	radii – radiuses	radii – radiuses
stylus	styli – styluses		
syllabus	syllabi – syllabuses	syllabi – syllabuses	syllabi – syllabuses
terminus	termini – terminuses	–	termini – terminuses
thesaurus	thesauri – thesauruses	–	–
uterus	uteri – uterus	–	–
corpus	–	–	corpora – corpuses
genus	genera – genuses	genera	genera
opus	opera – opuses	–	–
octopus	octopi – octopuses	–	–
<b>Bases ending in ex or ix</b>			
apex	apices – apexes	–	apices – apexes

cervix	cervices – cervixes	–	–
codex	codices – codexes	–	–
cortex	cortices – cortexes	–	codex
helix	helices – helixes	–	–
ibex	ibices – ibexes	–	–
latex	latices – latexes	–	–
matrix	matrices – matrixes	–	matrices – matrixes
tortix	tortices – tortixes	–	–
vortex	vortices – vortexes	–	vortices – vortexes
<b>BASES ENDING IN UM</b>			
aquarium	aquaria – aquariums	aquaria - aquariums	aquaria – aquariums
candelabrum	candelabra – candelabrum	–	candelabra – candelabrum
curriculum	curricula – curriculum	curricula – curriculum	curricula – curriculum
honorarium	honoraria – honorarium	–	–
maximum	maxima – maximum	maxima	maxima – maximum
memorandum	memoranda – memorandum	memoranda – memorandum	memoranda – memorandum
millennium	millennia – millennium	–	millennia – millennium
minimum		minima	minima – minimum
moratorium	moratoria – moratorium	–	moratoria moratorium
plectrum	plectra – plectrum	–	
podium	podia – podium	–	podia – podium
referendum	referenda – referendum	–	referenda – referendum
spectrum	spectra – spectrum	spectra – spectrum	spectra – spectrum
stadium	stadia – stadium		usually regular
stratum	strata – stratum	strata	strata – stratum
symposium	symposia – symposium	symposia – symposium	symposia – symposium
ultimatum	ultimate – ultimatum	–	ultima – ultimatum
<b>Greek plurals</b>			
<b>Bases ending in on</b>			
automaton	automata – automaton	automatons – automata	automatons – automata
ganglion	ganglia – ganglion		chiefly regular
<b>French plurals</b>			
adieu	adieux – adieu	adieux – adieu	adieux – adieu
beau	–	beaux – beaux	–
bureau	bureaux – bureau	bureaux – bureau	bureaux – bureau
chateau	chateaux – chateau	chateaux	–
milieu	milieu – milieu	–	–
plateau	plateaux – plateau	plateaux – plateau	plateaux – plateau
tableau	tableaux – tableau	tableaux	tableaux – tableau

Table 24: Noun occurring at a low rate

Example	Frequency in the BNC	Frequency in the COCA
adieu	0,02	0,03
ibex	not found	0,01
fibula	0,01	0,025
tibia	0,05	0,1
abacus	0,03	0,03
hippopotamus	0,15	0,08
stylus	0,09	0,05
uterus	0,03	0,1
apex	0,12	0,05
cervix	0,02	0,02
codex	0,11	0,1
cortex	0,07	0,1
latex	0,02	0,002
tortix	not found	not found
honorarium	0,14	0,19
moratorium	0,11	0,19
plectrum	0,14	not found
podium	0,04	0,2
oaf	0,07	0,06
turf	0,18	0,07

Table 24: Number of hits of individual nouns

Example	Written register		Spoken register	
	BNC	COCA	BNC	COCA
amoebae	16	26	0	1
amoebas	5	99	0	3
lacunae	23	78	0	0
lacunas	0	3	0	3
nebulae	24	993	0	0
nebulae	1	46	0	1
personae	44	249	0	4
personas	14	324	0	34
retinae	8	3	0	0
retinas	31	192	0	1
vertebrae	107	693	6	56
vertebras	0	3	0	2
cacti	41	497	1	7
cactuses	7	135	0	0
foci	132	411	0	4
focuses	645	8527	4	648

fungi	274	2016	7	74
funguses	4	6	0	2
narcissi	36	22	3	1
narcissuses	0	1	0	0
nuclei	299	1383	8	11
nucleuses	0	0	0	1
radii	48	180	0	0
radiuses	0	4	0	3
syllabi	10	351	1	1
syllabuses	225	25	6	1
thesauri	48	7	0	1
thesauruses	3	15	0	2
termini	47	50	4	0
terminuses	1	0	0	0
corpora	111	115	0	0
corpuses	9	6	0	0
helices	88	29	0	1
helixes	1	13	0	0
matrices	234	740	13	8
matrixes	1	23	1	0
vortices	41	202	0	15
vortexes	4	42	0	7
aquaria	82	46	1	0
aquariums	47	357	1	37
candelabra	56	247	1	40
candelabrum	0	3	0	0
curricula	252	3491	5	86
curriculum	10	298	0	10
maxima	67	327	1	9
maximums	4	47	2	3
memoranda	154	226	1	37
memorandum	7	127	1	8
millennia	131	1537	0	82
millennium	6	83	0	10
minima	60	113	3	0
minimums	1	263	2	76
referenda	30	127	0	33
referendum	83	207	0	33
spectra	344	1241	0	11
spectrum	1	48	0	14
stadia	30	32	3	7
stadiums	55	1236	3	228
strata	397	1003	4	45
stratum	0	1	0	0
symposia	35	261	0	7
symposium	5	108	1	8
ultimata	4	2	0	1
ultimatum	15	86	0	47
automata	38	165	0	0
automaton	12	108	0	10
ganglia	83	104	0	7
ganglion	0	4	0	0
wharves	51	142	1	5

wharfs	10	31	0	1
dwarves	55	334	1	14
dwarfs	264	1330	21	82
halves	357	2325	38	60
halfs	8	6	3	5
handkerchieves	12	1	0	0
handkerchiefs	82	396	5	21
hooves	202	1223	5	28
hoofs	47	162	2	6
rooves	5	1	0	0
roofs	623	2649	30	270
scarves	167	1387	10	127
scarfs	4	44	2	4
bureaux	369	11	5	0
bureaus	49	808	3	106
beaux	51	268	3	4
beaus	2	49	0	0
chateaux	22	78	0	4
chateaus	0	26	2	1
milieux	19	31	0	0
milieus	5	78	0	0
plateaux	49	8	0	0
plateaus	27	258	0	10
tableaux	76	358	0	4
tableaus	1	50	0	4
opera	2309	12209	77	1670
opuses	0	11	0	0
octopi	11	55	0	0
octopuses	29	268	0	7
genera	191	556	0	6
genuses	0	1	0	1