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Formal properties of English Modal verbs

(bakalářská práce)

Oto Kurtiš
(Anglická filologie – Čínská filologie)

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Prohlašuji, že jsem tuto bakalářskou práci vypracoval samostatně a uvedl úplný seznam citované literatury.

V Olomouci dne …….. Oto Kurtiš

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1 INTRODUCTION

My bachelor thesis will focus on analysing the formal behaviour of the verb *need* in order to find out how many variants of the verb there are. For example, Huddleston mentions that there are two variants of the verb *need*. One of them belongs to the category of lexical verbs and the other one is a modal auxiliary verb. However, there are indications that a third variant of lexical *need* may rarely occur (Huddleston and Pullum 2002, 111). This issue will be dealt with in the section specially devoted to *need*. Still, the basic assumption is that there are two variants of *need* which will be analysed on the modal-lexical verb scale. The two variants are expected to behave in a way that is characteristic of the class they belong to, i.e. the modal *need* will have properties typical of modal verbs and the lexical *need* will display properties typical of the lexical class of verbs. The differences will be considered as instances of the two different classes.

For the purpose of research, I will apply the criteria which are commonly used to distinguish between auxiliary and lexical verbs. According Huddleston, these criteria include the NICE properties - Negation, Inversion, Code and Emphasis. (Huddleston and Pullum 2002, 93-101). Negation means the presence or absence of supportive *do* when negating, inversion stands for subject-auxiliary inversion in questions and similar constructions (e.g. constructions with initial negative constituents). Emphasis includes emphatic polarity constructions in which supportive *do* is needed in the case of lexical verbs. Finally, code occurs when a piece of information is omitted because it can be understood from the previous context. This phenomenon, known as “elliptical stranding”, can occur immediately after modal verbs, but lexical verbs cannot be stranded in this way. Further properties of auxiliaries include position to various adjuncts, having reduced forms and inflection for negation. (Huddleston and Pullum 2002, 101-102).

In most grammar manuals auxiliary verbs are further divided into two categories: modal and non-modal. Since auxiliary *need* belongs to the subcategory of modal auxiliaries, further properties which are typical of this subclass will also be considered. Such properties are manifested in having only primary forms, no agreement with the subject, only bare infinitival complement, occurrence in remote apodosis and ability to be used in modally remote preterite in main clause (Huddleston and Pullum 2002, 101-102). By using the British National Corpus (BNC) and applying the above mentioned

criteria, samples of actual usage of the verb will be obtained and theoretical assumptions will be tested in practice. It is possible that further irregularities in the behaviour of the verb *need* will be encountered during the research, leading to a greater number of subclasses (variants of the verb *need*). These subclasses will be classified as belonging to either the modal or lexical category of *need*.

The first chapter will be devoted to a much more detailed overview of the above mentioned criteria which will be used to analyse and differentiate between modal and lexical *need* in later sections.

In the subsequent chapters a thorough research and analysis will be conducted, using the BNC to obtain samples representing the grammatical behaviour of *need* in the linguistic contexts produced by application of the criteria outlined in the first chapter. Special attention will have to be paid to the process of designing the query for each of the criteria in both of the corpora. The final section will concentrate on the interpretation of the results gained during the research. I will try to come to the conclusion as to the number of variants of the verb *need*.

1.1 Methodology

As stated in the introduction, the British National Corpus and the search engine Xaira will be used as a tool for searching and obtaining relevant data about the usage of British English. BNC is a collection of spoken and written English and is used by linguists who need to analyse how the English language is actually used in various linguistic contexts. The samples collected in the BNC contain 100 hundred million words of general contemporary English. The written part makes up the majority of the BNC – 90%. It includes all kinds of excerpts from written media, such as journals, newspapers, academic and fiction literature, or essays. The spoken part comprises 10% of the corpus and includes samples of spoken language used spontaneously in informal conversations, but also scripted talks from business meetings or radio shows.

While the BNC itself is a collection of British English, Xaira is the search engine which allows the user to search in the collection. What makes Xaira indispensable is the fact that it enables linguists to design quite specific queries. Based on the results of the queries, linguists can draw conclusions on how the language is actually used.

As stated in the introduction, the hypothesis is that there are at least two kinds of *need* whose linguistic behaviour will follow the properties of the classes they belong to. Therefore in the practical part first all of the individual properties of lexical and modal auxiliary *need* will be tested in the BNC. In order to find out whether there are any exceptions or irregularities, in the final section I will combine properties which are generally not supposed to occur at the same time (see section 4.10). This will also help me decide whether there is a sufficient amount of examples of the *need* blend (if there are any examples at all).

Because the practical part of my thesis is largely based on the BNC, I deem it necessary to describe the methods I will use to design the queries. For this reason each chapter of the practical part contains section called “Methodology” (except for chapter 4.6). This section contains the description of how I design the queries. All of the corpus examples are marked by the BNC text identification code in square brackets. The frequency of occurrence of the individual grammatical constructions in the BNC is also included. I always analyse a random set of 100 examples. If there are fewer examples, all of them are analysed. If any of the examples are irrelevant (e.g. due to mistakes in annotation, i.e. *need* is not followed by a bare infinitive, but by a noun) I comment on them.

2 LEXICAL VERSUS AUXILIARY VERBS: THEORETICAL BACKGROUND

2.1 Introduction

This section provides more detailed information about the formal behaviour of English auxiliary and modal auxiliary verbs and their dissimilarities from the lexical verbs. The two basic divisions of verbs into categories have been made by Huddleston and Quirk. Quirk talks about *full verbs* and *auxiliary verbs*, which he divides into *primary verbs* and *modal auxiliary verbs* (Quirk et al. 1985, 96). However, In my thesis I am going to follow Huddleston´s division of verbs, which is as follows: *lexical verbs* and *auxiliary verbs*, which are further divided into *modal auxiliary verbs* and *non-modal auxiliary verbs* (Huddleston and Pullum 2002, 92). Huddleston´s *modal auxiliary verbs* basically correspond with Quirk´s *modal auxiliary verbs*, *non-modal auxiliaries* correspond with *primary verbs*, *lexical verbs* correspond with *full verbs*. See Table 1 below.

Table 1: This table illustrates the division of verbs according to Huddleston and Quirk

Huddleston		**Quirk**	
Lexical verbs	Auxiliary verbs	Full verbs	Auxiliary verbs
	Modal auxiliary verbs		Modal auxiliary verbs
	Non-modal auxiliary verbs		Primary verbs

In the “Auxiliary verbs” section I am going to deal with those properties which are characteristic of auxiliary verb in general, both modal and non-modal, as opposed to lexical verbs. In the subsequent section called “Modal auxiliary verbs” the properties typical of modal auxiliary verbs will be outlined and contrasted with those of non-modal

auxiliaries and lexical verbs. My principal source in both of the sections will be Huddleston and Pullum and I will use their terminology. However, Quirk will likewise be consulted. Most of the properties mentioned by Huddleston coincide with those outlined in Quirk, the only difference being in the terminology. However, there is one more property mentioned in Quirk, *Independence of subject* (see 2.9), which concerns auxiliary verbs in general (Quirk et al. 1985, 126-127). In his reaction to Marta Kukucz´s thesis (Kukucz 2009), Peter Vaňušanik claims that one of the problems is the fact that she did not follow one manual, but two (Vaňušanik 2011, 8). I agree that for the sake of clarity it is definitely important to follow one manual in terms of terminology related to the division of verbs into classes and their properties. Nevertheless, it is likewise useful to check whether there is the same amount of information about the individual properties in both of the manuals, and whether there is the same number of properties themselves. As for the number of properties, I am going to include the (above mentioned) additional one which is dealt with in Quirk and see whether it will prove useful for the analysis. As for the detail in which the properties are dealt with, Quirk gives some additional information in his *Abnormal time reference* property (Quirk et al. 1985, 128) which otherwise corresponds with Huddleston´s *Modally remote preterite in main clause* (see 3.6) (Huddleston and Pullum 2002, 107). I will discuss these in more detail in (3.6).

I would also like to comment on the third generally respected source of information regarding English morphology and syntax. It is *Mluvnice současné angličtiny na pozadí češtiny* by Dušková, et. al. (Dušková 1994, 174 – 182). Dušková does not treat modal auxiliary verbs as a subcategory of auxiliary verbs, but separates them into two categories. While her explanation of the differences between lexical, modal and non-modal auxiliary verbs is included in the book, she does not go into so much detail with respect to the number of the criteria. For example, she omits emphasis from the NICE criteria and does not include the criterion related to the position of adverbs and quantificational adjuncts. As for modal auxiliary verbs, she does not deal with the property named “Remote conditionals” at all. Regarding modal auxiliary *need*, she does not add any information concerning its inability to occur in affirmative contexts and the fact that it lacks a preterite form and a clitic form. The rest of the criteria which are dealt with in Dušková coincide with Huddleston´s and Quirk´s criteria.

2.2 Auxiliary verbs

The following sections of the thesis deal with the properties which are shared by both modal and non-modal Auxiliary verbs. These properties are contrasted with those which are typical of lexical verbs. According to Huddleston, non-modal auxiliary verbs include *be*, *have*, *do* and (marginally) *use*. Modal auxiliaries, whose general properties will be described in greater detail in the next section, include *can*, *may*, *will*, *shall*, *must*, *ought*, *need* and *dare* (Huddleston and Pullum 2002, 92-106).

The criteria which will be applied to distinguish between auxiliary and lexical verbs will be used to test the linguistic behaviour of *need* in chapter 4 below. They include the NICE criteria and several other criteria mentioned by Huddleston and Quirk. The NICE acronym stands for Negation, Inversion, Code and Emphasis. In order to illustrate the practical consequences of the NICE properties, I have decided to include one combinatorial restriction mentioned by Huddleston (Huddleston and Pullum 2002, 104-105). Where no concrete reference is given, all the general information regarding lexical and auxiliary verbs and their properties is taken from Huddleston (Huddleston and Pullum 2002, 92-106).

2.3 Primary verb negation

This criterion relates to the presence or absence of the *do-operator* ("dummy" *do*) in negation. Generally, lexical verbs require the *do-operator* when they undergo negation, while auxiliary verbs don´t. When negating a lexical verb, the *do*-operator precedes the lexical verb and the *not* particle is attached to the auxiliary *do*, as in (1).

(1) a) *She does not accept this kind of behaviour.*
b) *She doesn´t accept this kind of behaviour.*
c) **She accepts not this kind of behaviour.*
d) **She accepts´nt this kind of behaviour.*

In the case of modal verbs the process is simpler. The negative particle is added after the modal verb, as in (2).

(2) a) *Tom must not know anything about this issue.*

b) *Tom mustn´t know anything about this issue.*

c) **Tom does not must know anything about this issue.*

As Huddleston points out, there is inflectional and analytical negation (Huddleston and Pullum 2002, 94). Inflectional negation, which is only possible in the case of auxiliary verbs, uses the contracted forms (*doesn´t*), analytical negation is the one which uses the *not* particle (*does not*). Note that apart from the primary verb negation, there is also non-verbal negation and non-imperative negation, as in (3).

(3) a) *They need not a motorcycle but a car.*

b) *Old people need not to feel alone.*

What these two kinds of negation have in common is the fact the negative particle they use does not refer to the preceding lexical verb, but to the following phrase. When analysing the corpus results, it will therefore be important to take into consideration the fact that *need* immediately followed by the negative particle *not* does not necessarily have to be modal, but lexical as well.

In this section I demonstrated that lexical verbs and modal verbs behave differently with respect to the way in which they undergo negation:

(4) **Lexical verbs need *do*-support to form a clausal negation while auxiliaries allow the incorporation of the negative particle *not*/*n´t*.**

I will refer to this conclusion in the practical part of my thesis.

2.4 Subject-auxiliary inversion

Inversion is a term describing the process which results in the reverse position of the subject and the verb. Lexical verbs remain in their usual position. At the same time the *do*-operator is added, occupying the position before the subject, as in (5).

(5) a) *Do they know it?*

b) **Know they it?*

Auxiliary verbs demonstrate a different behaviour in that they swap position with the subject, as in (6).

(6) a) *Can the children swim?*

b) *Do the children can swim?*

The constructions which allow inversion include (Huddleston and Pullum 2002, 95-96):

Interrogatives

There are two kinds: open (7a) and closed (7b).

(7) a) *What did they suggest?*

b) *Did John help you?*

Open interrogatives allow a variety of answers, while closed interrogatives only require yes/no answers.

I will have to be aware of and disregard those interrogative pronouns which are subjects because inversion in open interrogatives is not triggered by subjects, see (8).

(8) *Who wants a glass of champagne?*

Initial negative constituents

Initial negative constituents are words like *nothing*, *nowhere* which are placed at the beginning of a clause, as in the following example (9).

(9) a) *Nothing did they ask from us.*

b) **Nothing they asked from us.*

As demonstrated by the example above, the placement at the beginning of a clause triggers inversion. The scope of a negative constituent is limited to a clause. This will have to be taken into account as well.

Initial *only*

This element triggers inversion as well and, like initial negative constituents, it applies to a clause only, as is demonstrated in (10). In the example below auxiliary *do* is added before the subject *selection committee*.

(10) a) *Only three people did the selection committee choose.*

b) **Only three people the selection committee chose.*

The examples below are instances of the so called "focalization by fronting". Focalization refers to the initial element whose fronting is caused by *only*. When *only* is placed at the beginning of a clause, it causes inversion of the subject and the auxiliary verb.

Initial *so* and *such*

These two words cause inversion when placed at the beginning of a clause, as is shown in (11). Inversion affects the subject and the auxiliary verb. In the example below auxiliary *do* is added before the subject expressed by *they*.

(11) a) *Such a lot of time did they spend trying to find the culprit.*

b) **Such a lot of time they spent trying to find the culprit*

Apart from inversion, however, *so* and *such* may also cause subject postposing. According to Huddleston, "postponed subject can be moved over a sequence of verbs", as in (12) (Huddleston and Pullum 2002, 97).

(12) So warm had been the weather that they had decided to go out.

Conversely, subject-auxiliary inversion "places subject after a single auxiliary" (Huddleston and Pullum 2002, 97), as is demonstrated by example (13).

(13) *So warm had the weather been that they had decided to go out.*

Subject-auxiliary inversion and subject postposing will have to be distinguished when testing the behaviour of *need*.

Code

Inversion also appears in some code constructions (more on Code in section 2.5). The inverted code constructions correspond with those already outlined above. The characteristic is demonstrated by (14).

(14) a) *Tom can´t play chess and neither can I.*
b) **Tom can´t play chess and neither I can.*
c) *You can manage it and so can I.*
d) **You can manage it and so I can.*

In both (14a) and (14c) the second clause contains initial constituents which cause inversion. The first example contains an initial negative constituent, as in (9), while the latter includes initial *so*, as is shown in (11).

The other inverted code construction is termed *Tag question*. It is a short phrase which includes inversion and is added to the end of a statement. When the preceding proposition is positive, *Tag question* is negative and vice versa. This is illustrated in (15).

(15) a) *The students already know about that, don´t they?*
b) **The students already know about that, they don´t?*
c) *You didn´t ask him, did you?*
d) **You didn´t ask him, you did?*

Tag question corresponds to the closed interrogatives, both in that inversion is not triggered by any constituent and the fact that it can be followed by yes/no answers.

This section analyses the way in which lexical and auxiliary verbs participate in inversion:

(16) **Lexical verbs need *do*-support in inversion and they do not move to a different position. By contrast, auxiliary verbs do not require *do*-support and they swap position with the subject.**

2.5 Code: VP Ellipsis

This term is related to the reduction of the verb phrase. When VP Ellipsis is used, it is assumed that the speaker will deduce the meaning from the previous linguistic context. Again, code can be realized only with auxiliary verbs. If the previous part of the sentence, from which the meaning is to be inferred, does not contain an auxiliary verb, then the *do*-operator needs to be added, as in (17) below.

(17) a) *I eat a lot and Margaret does as well.*
b) **I eat a lot and Margaret eats as well.*

On the other hand, if an auxiliary verb is present, it can be repeated and left on its own before the site of ellipsis, as in (18) below (Huddleston and Pullum 2002, 99).

(18) *I can play tennis and John can [play tennis] too.*

This process is called elliptical stranding. As evident from the examples, elliptical stranding can only be realized with auxiliary verbs.

Code can combine with inversion (see section 2.4), primary verb negation, as in (19a) and emphatic polarity, as in (19b).

(19) a) *Will you be there? No, I will not / won´t.*
b) *She thinks he can´t help her, but he CAN.*

As is demonstrated by the above examples, the behaviour of auxiliary and lexical verbs differs also in the following way:

(20) **Auxiliary verbs can appear in code constructions. Lexical verbs, due to their rejection of stranding, cannot be used in this way.**

2.6 Emphatic polarity

In the emphatic constructions either the positive or the negative polarity is emphasized. In the case of auxiliary verbs, emphasis is placed on the auxiliary verb, as demonstrated in (21).

(21) *She CAN swim: I saw her in the swimming pool yesterday.*

Nevertheless, modal *need*, as will also be pointed out later, only occurs in non-affirmative contexts. Therefore there is probably no point in testing the behaviour of modal *need* in positive polarity constructions. Constructions containing emphasized lexical verbs require the *do*-operator on which the stress is placed, see (22).

(22) *He is not lazy, he DOES work a lot.*

In negative polarity constructions the auxiliary verbs only require the emphasized negative particle *not*, as in (23). This means that they do not need auxiliary *do*, which is otherwise placed before emphasized lexical verbs.

(23) *Do not say I´m staring at you, I am NOT.*

Lexical verbs need both the *do*-operator and the emphasized negative particle attached to the ”dummy” *do*, as in (24). Both the *do*-operator and the negative particle precede the lexical verb. Lexical verbs cannot carry the stress in emphatic polarity constructions.

(24) *That´s not true, I do NOT know anything.*

However, the examples show that in the case of emphatic polarity in negatives, modal verbs looks formally the same as their non-emphasized (but still negated) counterparts. The same is true of lexical verbs. For example, Huddleston presents two examples and adds that they “have primary verb negation, and hence require an auxiliary verb for this reason as well as because of the emphatic polarity.” (Huddleston and Pullum 2002, 98). Therefore the difficulty is that the *do* operator is included for two reasons – apart from the one related to emphatic polarity, lexical verbs also need it to undergo negation (as already mentioned in Negation part of the NICE constructions). In the examples cited in Huddleston the linguistic context makes it clear that the negative polarity is emphasized, but it is not possible to design the query in the BNC in this way.

For the above mentioned reasons I will only analyse lexical *need* occurring in positive emphatic polarity constructions, where it is clear that *do* is added because of emphatic polarity.

As far as emphatic polarity is concerned, I came to the conclusion which is summed up below:

(25) **Lexical verbs require the do operator when their positive or negative polarity is emphasized. On the other hand, auxiliary verbs do without it, i.e. the emphasis is realized phonetically by placing stress on the given auxiliary, not by any formal means.**

2.7 Position of adverbs and quantificational adjuncts[1]

As for the word order of English adverbs, they always precede lexical verbs and never follow them, as in (26a). Here the lexical verb *asks* follows the adverb *never*. This criterion is not related to supplements which, if they occur in the corpus, will need to be disregarded during the analysis. An example of a supplement is in (26b), where the adverb *sometimes* is separated from the rest of the sentence by commas.

(26) a) *He never asks about you.*
b) *She feels, sometimes, really exhausted.*
c) **She feels sometimes really exhausted.*

Auxiliary verbs, both modal and non-modal, are usually followed by adverbs, as in (27a), although sometimes they may be preceded by them, as is demonstrated by (27b). In (27a) the adverb *never* follows the modal auxiliary *could*, while in (27b) the adverb *certainly* precedes auxiliary *has*.

(27) a) *She could never restore her popularity again.*
b) *John certainly has taken taxi.*

[1] I have decided to deal with both of the criteria in one section. The reason is that the relationship between verbs and the criteria is the same in both of the cases. Lexical verbs appear neither before adverbs nor before quantificational adjuncts, while auxiliary verbs can either precede or follow both adverbs and quantificational adjuncts. The same attitude is adopted by Huddleston (Huddleston and Pullum 2002, 108).

Quantificational adjuncts

All, as well as other adjuncts like *each*, *both* precede lexical verbs. This is demonstrated in (28), where the quantificational adjunct *all* precedes the lexical verb *read*. (28b) is ungrammatical because the lexical verb *read* precedes the quantificational adjunct *all*.

(28) a) *The boys all read one page.*
b) **The boys read all one page.*

By contrast, quantificational adjuncts can either precede or (more frequently) follow auxiliaries. (29a) is an example which demonstrates the pre-verbal position of the quantificational adjunct *all*. The more frequent order can be seen in (29b), where the quantificational adjunct *all* follows the auxiliary verb *have*.

(29) a) *The boys all have read one page so far.*
b) *The boys have all read one page so far.*

In this section I came to the conclusion that one of the differences between lexical and auxiliary verbs is related to their position with respect to adverbs and quantificational adjuncts:

(30) **As far as lexical verbs are concerned, their position with respect to adverbs and quantificational adjuncts is invariable. They always follow them. By contrast, the position of auxiliary verbs with respect to adverbs and quantificational adjuncts varies, although they tend to occupy the position before them.**

2.8 Negative forms and clitic forms

Instead of clitic forms, Huddleston uses the term "reduced forms" as a more general term denoting both (phonetically) weak forms and clitics, which are morphologically distinct (Huddleston and Pullum 2002, 102). Since in the corpus research I will not be concerned with phonetically weak forms (due to the corpus limitations), the term "clitic forms" will be used.

A common property of auxiliary verbs is their ability to assume negative (31a) and clitic forms (31b). Clitic forms of auxiliary verbs are bound morphemes which do not occur on their own, i.e. they are attached to another word (e.g. *ll* in *I´ll*). Negative forms are bound morphemes as well. They are attached to the preceding auxiliary (*n´t*). (31a) is an instance of the negative contracted form of *will not*. (31b) is the clitic form of *will*, which is attached to the preceding pronoun.

(31) a) *She won´t do it.*
b) *She´ll take care of it.*

Lexical verbs, by contrast, cannot take on any of these forms, as is shown in (32). (Huddleston and Pullum 2002, 102). Both the negative form and the clitic form have been made up.

(32) a) **She playn´t computer games.*
b) **He´pl computer games every day.*

However, although the negative forms are listed as a separate property in Huddleston, they overlap with the negation criterion. Those verbs which satisfy the negation criterion (i.e they form negation simply by taking the *not* particle), also exhibit the capacity to include negative contractions. Therefore the negative forms property will not be dealt with separately in the research.

This section demonstrates that the difference between lexical and auxiliary verbs is visible when negative and clitic forms are considered:

(33) **Lexical verbs are morphologically less flexible than their auxiliary counterparts. This rigidity is reflected in the absence of their contracted forms, namely negative and clitic forms.**

2.9 Independence of subject

The property named “Independence of subject” is mentioned by Quirk (Quirk et al. 1985, 126-127). It relates to the fact that auxiliary verbs are semantically independent of the subject. This independence is manifested in three ways.

A. Auxiliary verbs can refer to both animate and inanimate subjects, as one can see in the following examples in (34).

(34) a) *John should arrive at three o´clock.*
b) *The train should arrive at three o´clock.*
c) *John thinks she is stupid.*
d) **The train thinks she is stupid.*

On the other hand, lexical verbs do not usually share this characteristic, as shown in (34d). However, there are exceptions, including the above mentioned lexical verb *arrive*, which can be used with both animate and inanimate subjects even when it is not preceded by any auxiliary verb, see (35).

(35) a) *The train arrived five minutes late.*
b) *John arrived five minutes late.*

B. Auxiliary verbs can be used with existential *there*, as demonstrated below in (36). By contrast, lexical verbs do not usually occur in this construction, as demonstrated by (36b).

(36) a) *There can be problems.*
b) **There supposed.*

In this case there are exceptions as well. An instance of an exception can be seen in (37), where the lexical verb *remains* appears in the existential *there* construction.

(37) *There remains the problem of finance.*

C. The change of voice is not accompanied by the change of meaning in the case of auxiliaries, but the change of meaning is characteristic of lexical verbs. This difference is illustrated by the examples in (38).

(38) a) *He should clear up all this mess.*

b) *All this mess should be cleared up by him.*

c) *Her friends want to meet Jane.*

d) *Jane wants to be met by her friends.*

In (38a) and (38b), where the voice of an auxiliary is changed, the agent remains the same. In both of the sentences *he* is the one who should clear up the mess. Examples (38c) and (38d), however, are different in that the initiative shifts from *her friends* to *Jane*. This is accompanied by the change of voice of the lexical verb.

The criteria concerning animate and inanimate subjects (A) and voice (C) have something in common. It is the fact that they are largely based on semantics. With respect to (A) Quirk claims that "there is a lack of semantic restrictions between the subject and the auxiliary verb" (Quirk et al. 1985, 127). As for (C), Quirk says that "auxiliaries usually admit the change from one voice to the other without change of meaning" (Quirk et al. 1985, 127). In my opinion, however, the formal (morphological any syntactic) properties are more reliable in distinguishing between modal and lexical *need*. As for the (B) criterion, Quirk´s definition does not mention the semantic aspect, it only points out that "there is the possibility of constructions with existential *there*". (Quirk et al. 1985, 127). On the other hand, Quirk mentions the existential *there* criterion as one of the three ways of the manifestation of the semantic dependence/independence of the verb. Although the underlying cause is related to semantics, it will result in the ability/inability of lexical *need* to occur in the syntactic existential *there* construction. I will include this property in the practical part and the BNC will either prove or disprove its reliability.

Below is the conclusion I came to in this section:

(39) **It is characteristic of auxiliary verbs to appear in the existential *there* construction. However, it is not typical of lexical verbs, although they may occur in this construction as well.**

2.10 Combinatorial restrictions

The last criteria mentioned by Huddleston concern the limitations related to the possible combinations of auxiliary verbs. There are three restrictions mentioned by

Huddleston (Huddleston and Pullum 2002, 93-101), two of which are related to modal auxiliaries only. Since this section is concerned with auxiliaries in general, only the one which is related to both modal and non-modal auxiliaries will be mentioned here. The latter two will be dealt with in 3.7.

The criterion concerning auxiliary verbs in general makes it impossible for auxiliary *do* to combine with other auxiliaries, which is demonstrated by (40a). The only exception is the imperative. Lexical verbs can of course combine with auxiliary *do*, as in (40b).

(40) a) * *I do be reading.*

b) *I do like your attitude.*

The combinatorial restriction which helps in differentiating between lexical and auxiliary verbs is summed up below:

(41) **This combinatorial restriction results from the four NICE criteria, according to which lexical verbs need *do*-support in these constructions and therefore can occur with it. Auxiliary verbs do not require *do*-support and hence cannot occur in construction with auxiliary *do*.**

2.11 Summary

In this section I concentrated on the properties of English auxiliary verbs and outlined seven of them. In addition, I mentioned one combinatorial criterion which, because it results from some of the already mentioned properties (see 2.10), will not be given special attention in the practical part of my thesis. The sources I drew from were both Huddleston and Quirk. I came to the conclusion that both of the sources are very similar with respect to the properties of auxiliary verbs. In order to maintain unity, I used Huddleston´s terminology in most cases. The one case in which I had to use Quirk´s terminology is *Independence of subject* (see section 2.9) because this property is not dealt with in Huddleston (see section 2).

To sum up, the conclusions drawn in this section are as follows:

Primary verb negation

Lexical verbs need *do*-support to form clausal negation while auxiliaries allow the incorporation of the negative particle *not*/*n´t*.

Subject-auxiliary inversion

Lexical verbs need *do*-support in inversion and they do not move to a different position. By contrast, auxiliary verbs do not require *do*-support and they swap position with the subject.

Code: VP Ellipsis

Lexical verbs, due to their rejection of stranding, cannot appear in code constructions. On the other hand, auxiliary verbs can be used in this way.

Emphatic polarity

Lexical verbs require the *do* operator when their positive or negative polarity is emphasized. On the other hand, auxiliary verbs do without it, i.e. the emphasis is realized phonetically by placing stress on the given auxiliary, not by any formal means.

Position of adverbs and quantificational adjuncts

As far as lexical verbs are concerned, their position with respect to adverbs and quantificational adjuncts is invariable. They always follow them. By contrast, the position of auxiliary verbs with respect to adverbs and quantificational adjuncts varies, although they tend to occupy the position before them.

Negative forms and clitic forms

Lexical verbs are morphologically less flexible than their auxiliary counterparts. This rigidity is reflected in the absence of their contracted forms, namely negative and clitic forms.

Independence of subject

It is not typical of lexical verbs to appear in the existential there constructions. However, as for auxiliary verbs, they occurrence in these constructions is normal.

Combinatorial restrictions

Regarding lexical and auxiliary verbs, there is one combinatorial restriction which results from the four NICE criteria, according to which lexical verbs need *do*-support in these constructions and therefore can occur with it. Auxiliary verbs do not require *do*-support and hence cannot occur in construction with auxiliary *do*.

3 THE SPECIFICITY OF ENGLISH MODALS

3.1 Modal Auxiliary verbs

As stated in section 2, modal auxiliary verbs form a subclass of auxiliary verbs. Their linguistic behaviour is different from both the lexical verbs and the non-modal auxiliary verbs. In this chapter their different behaviour will be analysed and comparisons will be made with lexical and non-modal auxiliary verbs.

According to Huddleston, the criteria include *only primary forms*, *no agreement*, *bare infinitival complement*, *remote conditionals*, *modally remote preterite in main clause* (Huddleston and Pullum 2002, 106-108). As in the case of Auxiliary verbs, I added two combinatorial restrictions as actual demonstrations of the general properties of modal auxiliary verbs (Huddleston and Pullum 2002, 104-105). Where no concrete reference is given, all the general information regarding lexical, non-modal and modal auxiliary verbs and their properties is taken from Huddleston (Huddleston and Pullum 2002, 106-108).

3.2 Only primary forms: Specific paradigm

The modal auxiliary verbs lack all the secondary forms – the plain form, gerund participle and past participle, see (42a-e). They only have primary forms – present and preterite, as is evident from (42f, g).

(42) a) **John wants to can speak German.*
b) **You will must inform me about the results.*
c) **Can speak German before I return!*
d) **I enjoy not musting wake up early.*
e) **I have never musted do such things.*
f) *Who will have a cup of coffee?*
g) *She would never cheat us.*

Examples (42a), (42b) and (42c) are the plain forms. The plain form includes *to*-infinitives, bare infinitives and imperatives, respectively. Example (42d) is gerund

participle and example (42e) is past participle. All the examples are wrong because modal auxiliaries do not form these forms. Examples (42vi, vii) are correct because the modal *will* occurs in primary and preterite forms, respectively.

Non-modal auxiliary verbs (43) and lexical verbs (44) behave differently from modal auxiliaries. The different behaviour is reflected in their ability to assume secondary forms.

(43) a) *John wants to be able to speak German.*
b) *You will have to inform me about the results.*
c) *Be able to speak German before I return!*
d) *I enjoy not having to wake up early.*
e) *I have never had to do such things.*

In (43a) *be able to* follows a to-infinitive. In (43b) *have to* is preceded by a bare infinitive. *Be able to* in (43c) is imperative. Example (43d) is an instance of gerund participle *having*, (43e) contains past participle *had*. All these examples are grammatical because the secondary forms are assumed by non-modal auxiliary verbs.

(44) a) *John wants to go to Germany.*
b) *I request that you read the relevant chapters in the textbook.*
c) *Read the whole book before the end of the week!*
d) *My cousin enjoys travelling all over Europe.*
e) *He has never meant to hurt you.*

As in (43), the examples in (44) are likewise all grammatical. This time lexical verbs occur in secondary forms. In (44a) *go* is preceded by a *to*-infinitive. *Read* in (44b) is an example of a lexical verb in bare infinitive. *Read* in (44c) is in imperative. *Travelling* in (44d) is gerund participle of *travel*, example (44e) contains *meant*, which is past participle of *mean*.

The above examples are a demonstration of the fact that lexical verbs in English have rich morphological paradigm. Auxiliary verbs have all of it (though often irregular), but modals have only one form, i.e. their paradigm is unique and simple. This is summed up by the conclusion below:

(45) **Modal auxiliary verbs only have primary forms. Lexical verbs and non-modal auxiliaries are not affected by these limitations.**[2]

3.3 No 3rd person agreement

Contrary to lexical (46) and non-modal auxiliary verbs (47), modal auxiliary verbs (48) are characterized by not displaying morphological agreement with the subject. Therefore they are not marked for 3rd person singular.

(46) a) *He still feels uneasy about the issue.*
b) **He still feel uneasy about the issue.*

Lexical *feel* takes on the *s* ending in order to display 3rd person agreement.

(47) a) *Tom has always been very helpful.*
b) **Tom have always been very helpful.*

Non-modal auxiliary *have* occurs in its irregular form *has*, which is marked for 3rd person agreement.

(48) a) *The teacher may ask you about that.*
b) **The teacher mays ask you about that.*

Modal *may* is not marked for 3rd person agreement.

In this section I came to the conclusion that 3rd person agreement can be used to distinguish between lexical, non-modal and modal auxiliaries:

(49) **The morphology of the modal auxiliary verbs is not affected by the 3rd person singular. Therefore no bound morpheme gets attached to them even**

[2] The restrictions concerning the morphology of modal auxiliaries are discussed in more detail also in the following subsection 3.3.

when they refer to the 3rd person. Lexical verbs and non-modal auxiliaries, on the other hand, are marked for 3rd person singular.

3.4 Subcategorisation: Bare infinitival complement

Modal auxiliary verbs are exclusively followed by bare infinitival complements, see (50).

(50) a) *We can make it simpler.*
b) **We can to make it simpler.*

Lexical verbs do not usually take bare infinitival complements, as is illustrated by example (51a). Even when they do, they are not immediately followed by them. In such cases a noun phrase is inserted between the lexical verb and its complement, as demonstrated by (51c) below.

(51) a) *I want to take care of it.*
b) **I want take care of it.*
c) *I will help you finish your homework.*

Like most lexical verbs, non-modal auxiliary verbs do not take bare infinitival complements. This is illustrated in example (52).

(52) a) *I have to be there by five.*
b) **I have be there by five.*

The above examples demonstrate that bare infinitival complement is also helpful in differentiating between lexical, non-modal and modal auxiliaries:

(53) **Modal auxiliary verbs are directly followed by bare infinitival complements, while lexical and non-modal auxiliary verbs are not.**

3.5 Remote conditionals

The apodosis part of the remote conditional has to include a modal auxiliary verb as the first verb, see (54a). Example (54b) is incorrect because *were* is a non-modal auxiliary verb.

(54) a) *If you had a pet, you would not be so lonely.*
b) **If you had a pet, you were not so lonely.*

The results of this section can be summed up by the conclusion below:

(55) **Only modal auxiliary verbs can occupy the first verbal position in the apodosis part of the remote conditional. Lexical and non-modal auxiliary verbs cannot appear in this position.**

3.6 The Tense of Modals: Modally remote preterite in main clause

According to Huddleston, the preterite forms of modal auxiliary verbs can be found in main clauses having either past time meaning, as can be seen in (56a), or modal remoteness meaning, as in (56b).

(56) a) *Could you park the car yesterday?*
b) *Could you park the car now?*

Lexical and non-modal auxiliary verbs do not have this property, i.e. their preterite forms in main clauses only have the past time meaning. This property is demonstrated in (57).

(57) a) *Were you able to park the car?*
b) **Were you able to park the car now?*

This property has a lot in common with the one mentioned by Quirk, who uses the term *Abnormal time reference* (Quirk et al. 1985, 128). The difference from Huddleston´s *Modally remote preterite* is in the scope of what is included. While Huddleston only talks about the preterite forms with past time or modal remoteness

meaning (Huddleston and Pullum 2002, 107), Quirk adds that both the present (58a) and the preterite forms (58b) of the modal auxiliary verbs can also be used to refer to the future time (Quirk et al. 1985, 128).

(58) a) *She may leave her job next year.*

b) *She might leave her job next year.*

This section of my thesis demonstrates the diverse grammatical behaviour of verbs with respect to modally remote preterite in main clause:

(59) **When Modal auxiliary verbs occur in main clauses in their preterite forms, they can refer to the past or the modal remoteness. Their present forms refer either to the present or the future time. Lexical and non-modal auxiliary verbs are much more limited in that their preterite forms in main clauses only refer to the past.**

3.7 Combinatorial restrictions

These criteria, taken from Huddleston, have already been referred to in 2.9. Here I am going to deal with the two restrictions which apply specifically to modal auxiliary verbs. They are as follows.

A. Modals cannot combine, as is demonstrated by (60) below.

(60) **You can must ask me.*

B. Aspectual use cannot combine with the modal verbs as well, therefore example (61) is ungrammatical.

(61) **I used to must do the dishes.*

Similarly to the previous combinatorial restriction related to auxiliary verbs in general (see 2.10), the two restrictions related to modal verbs overlap with two properties that have been mentioned earlier. In this case, the properties include *Only*

primary forms and *Bare infinitival complement*. The former property relates to the fact that modal verbs do not have a plain form, and hence they cannot occur in infinitive. However, according to the latter property, modal verbs must be followed by a bare infinitive. These two properties make it impossible for modal verbs to combine. As for *use*, it also must be followed by a *to*-infinitive, which excludes modal verbs.

The conclusion I came to in this section is summed up below:

(62) **Modals can combine neither with each other, nor with aspectual *use*.** [3]

3.8 Summary

In this section I outlined the basic formal properties of English modal auxiliary verbs as opposed to lexical and non-modal auxiliary verbs. I characterized five properties and two combinatorial restrictions which correlate with some of the properties (see 3.7). For this reason, combinatorial restrictions will not be dealt with separately in the practical part.

As stated earlier, most of the criteria used by Huddleston and Quirk coincide, the difference usually being in the terminology. In the case of *Modally remote preterite in main clause* (used by Huddleston) Quirk addresses the same issue in his *Abnormal time reference*, but also goes into a little more detail than Huddleston does (see 3.6). As in the case of auxiliary verbs, I chose to stick with the terminology used by Huddleston.

Below is the list of properties I characterized in this section.

Only primary forms

Modal auxiliary verbs only have primary forms. Lexical verbs and non-modal auxiliaries are not affected by these limitations.

[3] The two combinatorial restrictions overlap with other already mentioned criteria and therefore will not be dealt with separately in the practical part of my thesis.

No 3rd person agreement

The morphology of the modal auxiliary verbs is not affected by the 3rd person singular. Therefore no bound morpheme gets attached to them even when they refer to the 3rd person. Lexical verbs and non-modal auxiliaries, on the other hand are marked for 3rd person singular.

Bare infinitival complement

Modal auxiliary verbs are directly followed by bare infinitival complements, while lexical and non-modal auxiliary verbs are not.

Remote conditionals

Only modal auxiliary verbs can occupy the first verbal position in the apodosis part of the remote conditional. Lexical and non-modal auxiliary verbs cannot appear in this position.

Modally remote preterite in main clause

When Modal auxiliary verbs occur in main clauses in their preterite forms, they can refer to the past or the modal remoteness. Their present forms refer either to the present or the future time. Lexical and non-modal auxiliary verbs are much more limited in that their preterite forms in main clauses only refer to the past.

Combinatorial restrictions

Modal auxiliary verbs cannot occur in combination with each other and with aspectual *use*.

4 THE ENGLISH VERB NEED

To sum up, in the following chapters *need* will be analysed using the criteria mentioned in the previous chapters. These criteria are summarized in Table 2 below.

Table 2

	Lexical verbs	Modal verbs	Definition number Section
Negation by means of *not*	−	+	(4) 2.3
Possibility of inversion of subject and verb	−	+	(16) 2.4
Ability to occur in code constructions	−	+	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+	(30) 2.7
Ability to assume clitic forms	−	−	(33) 2.8
Occurrence in the existential *there* construction	+[4]	+	(39) 2.9
Having only primary forms and not displaying 3rd person agreement	−	+	(45), (49) 3.2, 3.3
First verb in the apodosis part of the remote conditional Having no preterite form	− −	− +	(55), (59) 3.5, 3.6
Subcategorisation: Bare infinitival complement	−	+	(53) 3.4

[4] As mentioned in section 2.9, even lexical verbs may occur in the existential *there* construction. However, their occurrence in this construction is supposed to be less frequent than in the case of modal verbs. I will use this criterion and either prove or disprove its reliability in differentiating between the lexical and modal variants of *need*.

As for the ordering of the criteria, the first four are grouped together because they are all related to the *do*-operator. As for the following criteria, those which concern auxiliary verbs in general are dealt with first. The rest are those criteria which only apply to modal auxiliary verbs.

The aim of this chapter is to demonstrate that there are at least two variants of the verb *need* in Modern English. The majority[5] of the criteria mentioned in the previous chapters will be used to produce specific linguistic environments in the BNC data containing the verb *need*. The prediction is that the linguistic behaviour of one of the two variants will follow the pattern which is characteristic of lexical verbs, while the other will display properties characteristic of auxiliary verbs. Therefore the two variants of *need* will be classified as instances of lexical and auxiliary verbs.

This prediction is based on the theoretical manuals. For example, Huddleston mentions that there are two variants of the verb *need*. He maintains that of them belongs to the category of lexical verbs and the other one is a modal auxiliary verb (Huddleston and Pullum 2002, 109-110). The same is pointed out by Quirk (Quirk et al. 1985, 138).

According to Huddleston, there are three characteristic features which distinguish modal auxiliary *need* from other modal verbs (Huddleston and Pullum 2002, 110). These include occurrence in non-affirmative contexts only, lacking any clitic forms and having no preterite form. I will discuss these in detail in the subsequent sections.[6] Huddleston concludes that the distinction between lexical and modal *need* is preserved. He maintains that *needed* is always lexical because it cannot be found in the NICE constructions (Huddleston and Pullum 2002, 111).[7] However, Huddleston does mention that *to* is exceptionally omitted with lexical *need* (Huddleston and Pullum 2002, 111). Similarly, according to Quirk, there are blends in which the verb *need* has *s* inflection followed by a bare infinitive (Quirk et al. 1985, 139). Palmer and Quirk give actual examples of this rare blend. See (63):

(63) a) *I don´t need ask.* (Palmer 1988, 25)

b) *Does he need ask?* (Palmer 1988, 25)

c) *One needs only reflect for a second…* (Quirk et al. 1985, 139).

[5] An exception is the clitic form of modal *need* which, since it does not exist, cannot be tested in the BNC.

[6] See section 4.1 for non-affirmative contexts, section 4.6 for the lack of clitic forms and section 4.9 on having no preterite form.

[7] More in section 4.9

In all of the above examples one can notice that *need* is a lexical verb. In (63a) and (63b), the reason for this conclusion is the fact that it requires the *do*-operator to undergo negation and inversion. In (63c) it has the *s* inflection. However, in all of the three cases it is followed by a bare infinitive. Hence the conclusion that, in spite of being a lexical verb, it exhibits a modal auxiliary property.

Therefore there is a possibility that concrete examples of this rare blend will be encountered in the BNC.[8] If the assumption proves correct, then *need* resembles marginal modal *dare*. One of the three forms of *dare* is a blend which is a lexical verb but, uncharacteristically of lexical verbs, it is followed by a bare infinitive (Veselovská 2010, 10). Based on the theoretical manuals, the prediction is that the *need* blend, if it occurs at all, will be much less frequent than in the case of *dare*.

4.1 Primary verb negation

Before testing the behaviour of *need* with respect to negation, I would like to comment on one of the three characteristic properties that distinguish modal *need* from the other modals (see [6] in chapter 4), i.e. its ability to occur in non-affirmative contexts. Consider the following example (64).

(64) a) *We need not ask them a favour.*

b) **I think we will need take some time to reconsider our decision.*

As the two examples above demonstrate, modal *need* cannot occur in affirmative contexts. The context for modal *need* always has to include either inversion, negation or other elements that mark it as non-affirmative. Such elements include e.g. words like *anybody*, *either* or *ever*, although these words tend to occur both in affirmative and non-affirmative contexts. The important point is that if they occur in declarative sentences which "have semantic affinities with negation" (Hudleston and Pullum 2005, 155), then even these declarative sentences are considered to be non-affirmative contexts, as in (65) below.

[8] The *need* blend is dealt with in section 4.10 Subcategorisation: Bare infinitival complement.

(65) a) *He was too shy to talk to anybody.*

b) *John has more experience than either of us.*

c) *She came back stronger than ever.*

All of the above sentences have a negative import. In (65a) he did not talk to anybody because he was shy, in (65b) we do not have as much experience as John, in (65c) she had never been as strong as when she came back.

As mentioned in (4), lexical verbs need *do*-support to form a clausal negation while auxiliaries allow the incorporation of the negative particle *not*/*n´t*. The supposition is that *need* will also appear in these two forms.

4.1.1 Methodology

I searched for three constructions in the BNC:

need not directly followed by a bare infinitive
needn´t
do not need to

As for *need not*, I used the Query Builder and searched for *need not* as a Phrase directly followed by a bare infinitive. The first content node was specified as a Phrase *need not*, the second content node as a disjunction of VBI | VDI | VHI | VVI, where VBI is a tag for the infinitive form of the verb be, VDI for the infinitive form of the verb do, VHI for the infinitive form of the verb have, and VVI for the infinitive form of a lexical verb. The link between the two nodes was specified as NEXT. See Figure 1 below.

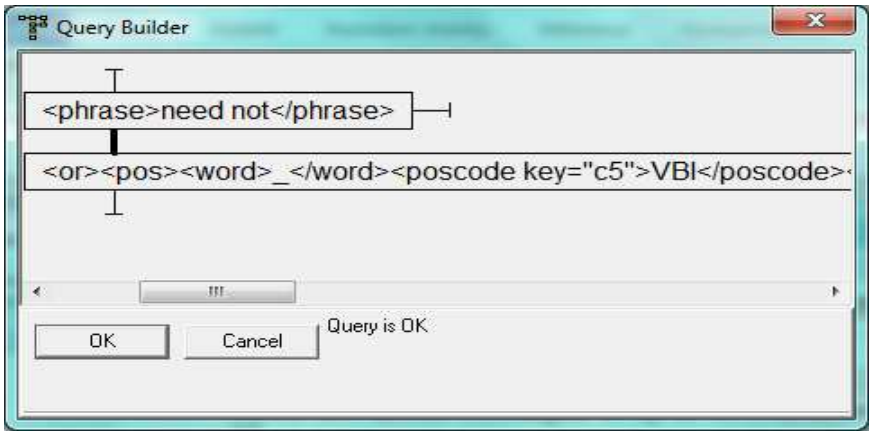

Figure 1: A screenshot of the Query Builder query for *need not* directly followed by a bare infinitive

Regarding *needn´t* and *do not need to*, I made use of the Phrase Query, where I entered *needn't* and *do not need to* (*need* has to be separated from *n´t* by a space). See Figure 2 below.

Figure 2: A screenshot of the Query Builder query for *needn´t*

4.1.2 Results

The corpus results indicate that the negation of *need* can be performed both by the addition of *not* after the verb (66a) or by negating the *do*-operator, in which case both the operator and the negative particle appear in the position before *need* (66b). Moreover is (66a) followed by a bare infinitive, while (66b) has a *to*-infinitive.

(66) a) *I need not tell you how topical this subject is.* [ABV 185]
b) *You do not need to confess to anyone else.*. [CA5 2418]
c) *But they needn't be underlined.* [HRC 462]

However, as mentioned in the theoretical part of my thesis, *need* can also be directly followed by the negative particle without being classified as modal. This happens in cases when the negative particle does not refer to *need*, but to the following phrase. Therefore the negation property is not entirely reliable for determining whether the *need* in question is lexical or modal. A possible solution to this problem would be searching for the contracted form of *need not* (*needn´t*) (66c). The contracted form is clearly an example of modal *need*. *Needn´t* is also related to the negative forms

property, which is referred to in the theoretical part of my thesis. Since it overlaps with the negation criterion, I decided to deal with it in this section. As mentioned in section 4, modal *need* does not have a clitic form, but it does have a negative form like the rest of modal verbs, as demonstrated by (66c).

Lexical *need* not only does not have a clitic form, but it cannot even have a negative form because the negative particle is attached to the preceding dummy *do*, not to *need* itself (66b).

There were 1487 examples of *need not* followed by a bare infinitive, 239 examples of *do not need to* and 492 examples of *needn´t* .

According to the BNC there are two different variants of *need*. Of of them forms negation in a way that is characteristic of lexical verbs (i.e. by means of dummy *do* and the addition of the negative particle *not*). The other one behaves like an auxiliary verb in that it only requires the negative particle *not.*

Table 3

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)[9]	(4) 2.3

4.2 Subject-auxiliary inversion

In (16) it was concluded that Lexical verbs need *do*-support in inversion and they do not move to a different position. By contrast, auxiliary verbs do not require *do*-support and they swap position with the subject.

4.2.1 Methodology

Searched constructions:

need I directly followed by a bare infinitive

[9] Frequency is enclosed in the brackets.

do I need to

Regarding *need I* directly followed by a bare infinitive, I used the Query Builder query, analogous to the one in Figure 1. As for *do I need to*, I used the Phrase Query analogous to the one in Figure 2.

4.2.2 Results

The examples below indicate that there are two variants of *need* with respect to the way they form inversion. In the first case, *need* has to undergo subject-auxiliary inversion and thus displays the auxiliary properties (67a). In (67b) *need* remains in its position, while the inversion is conducted by the *do*-operator, which is characteristic of lexical verbs. The bare/*to* infinitive also helps in the categorisation.

(67) a) *'Need I go into details?* [JXU 3387]

b) *Do I need to go to a lawyer?* [A01 250]

There were 36 examples of *need I* directly followed by a bare infinitive, 41 examples of *do I need to* in the BNC.

There are two different variants of the verb *need* with respect to their syntactic behaviour in inverted constructions. One of the two variants follows the auxiliary verbs pattern of inversion because it does not require the *do*-support. The latter variant displays the property typical of lexical verbs – it needs auxiliary *do* to undergo inversion.

Table 4

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4

4.3 Code

In (20) it was noted that auxiliary verbs can appear in code constructions. Lexical verbs, due to their rejection of stranding, cannot be used in this way.

4.3.1 Methodology

Searched constructions:

neither need followed by all personal pronouns[10] followed by a dot (e.g. *neither need we.*)
so do followed by all personal pronouns followed by a dot (e.g. *so do we.*)
need followed by all personal pronouns followed by a question mark (e.g. *need we?*)

The Phrase Query, which is analogous to the one in Figure 2, was used in all cases.

4.3.2 Results

There are two patterns in which the grammatical behaviour of *need* in the Code construction appears. In (68a) modal *need* can be stranded in the Code structure, (68b) shows a construction which does not allow *need* to be stranded because it is lexical. The *to*/ bare infinitive criterion is also helpful in the categorization. Nevertheless, there were only a few examples of the code constructions in the BNC. Of all the possible methods that I tested, there were only 7 examples of question tags, which can be regarded as instances of the code construction, as in (68a). As for lexical *need*, the only way of searching for the code construction is, for example, by entering the phrase *neither do I*. However, this code construction can refer to any lexical verb, not only to *need.* Therefore I did not manage to find the code construction for lexical *need* in the BNC. For this reason, (68b) is illustrative only.

(68) a) *Well, I suppose we needn't get married, need we?'* [HRA 4164]
b) *John does not need to buy a car and neither does Jane.*

[10] All personal pronouns were in the nominative form. This is relevant for all of the three constructions.

The code criterion likewise confirms the proposition that there are two variants of *need* whose formal syntactic behaviour differs. One of the two variants can be stranded and subsequently be used in code constructions. That is why it behaves like an auxiliary and differs from the one which cannot be stranded and therefore can be categorised as a lexical verb. However, the fact that lexical *need* requires *do*-support in the code constructions cannot be verified in the BNC.

Table 5

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5

4.4 Emphatic polarity

In (25) I stated that lexical verbs require the *do* operator when their positive or negative polarity is emphasized. On the other hand, auxiliary verbs do without it, i.e. the emphasis is realized phonetically by placing stress on the given auxiliary, not by any formal means. Peter Vaňušaník in his bachelor thesis uses an example *He need oppose me!* as a demonstration of emphatic polarity with modal *need* (Vaňušanik 2011, 27). However, as mentioned in section 2.1.4., modal *need* only occurs in non-affirmative contexts and indeed I have not managed to find Peter Vanusanik´s example in the corpus. This is supported by Palmer who argues that even with "emphatic affirmation the auxiliary forms do not occur unless there is also negation or inversion" (Palmer 1988, 24). There is no negation or inversion in Peter Vaňušanik´s example.

4.4.1 Methodology

Searched constructions:

do need to

The Phrase Query for *do need to* is analogous to the one in Figure 2.

4.4.2 Results

There were 190 solutions for *do need to* in the BNC. Because of the corpus limitations I can only prove that lexical *need* needs *do*-support in positive emphatic polarity. (69a) is an example of this variant of *need*.

(69) *Authors do need to know about contexts.* [CG8 112]

The only conclusion that is directly supported by the BNC is that there is a variant of *need* which syntactically resembles lexical verbs in that it has to be preceded by auxiliary *do* in order to be emphasized. The other reason for concluding that it is lexical is the fact that it has a *to*-infinitive.

Table 6

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+[11]	(25) 2.6

[11] As mentioned in chapter 2.6, due to technical limitations I was not able to find actual examples in the BNC.

4.5 Position of adverbs and quantificational adjuncts

In (30) I came to the conclusion that as far as lexical verbs are concerned, their position with respect to adverbs and quantificational adjuncts is invariable. They always follow them. By contrast, the position of auxiliary verbs with respect to adverbs and quantificational adjuncts varies, although they tend to occupy the position before them.

4.5.1 Methodology

List 1

The Query Builder queries for constructions in List 1 are analogous to the Query Builder query illustrated in Figure 1.

need hardly directly followed by a bare infinitive
hardly need directly followed by a bare infinitive
needed both directly followed by a bare infinitive
needed each directly followed by a bare infinitive
needed all directly followed by a bare infinitive
all need directly followed by a bare infinitive
need not directly followed by a bare infinitive and either preceded or followed by *all, both, each*

List 2

List 2 contains constructions that were searched for using the Phrase Query, which is analogous to the one illustrated in Figure 2.

often need to
needed often
needs often
all need to

4.5.2 Results

In order to find modal *need*, I had to use an adverb with negative polarity meaning. This is because modal *need* never occurs in affirmative contexts. In example (70a) the adverb *hardly* occurs after the verb, therefore according to this criterion *need* in (70a) is modal (which can also be proved by pointing out the bare infinitive). In (70b) *need to* is preceded by the adverb *often*, hence the conclusion that it is lexical for this reason as well as because it is directly followed by a *to*-infinitive. (70c) is an example of modal *need* that is preceded by an adverb (according to Huddleston, this is also possible, see section 2.1.5).

(70) a) *If the cinema is right the film need hardly matter.* [A6C 658]

b) *Witnesses often need to be talked through this aspect very carefully.* [J75 1613]

c) *'I knew Charles wanted me to marry you for reasons we hardly need discuss..*[G1C 1638]

There were 43 examples of *need hardly* plus bare infinitive, only 2 examples of *hardly need* plus bare infinitive, 27 examples of *often need to*. According to the expectations, the BNC did not show any examples of lexical *need* preceding an adverb. There were zero solutions for *needed often*. As for *needs often*, there were two examples in which, however, *needs* was a plural noun.[12]

The position of quantificational adjuncts *all*, *each* and *both* with respect to *need* is also worth considering. However, the research conducted in the BNC only confirmed that lexical *need* follows quantificational adjuncts, as demonstrated by (71a) below. The reason for this conclusion is the fact that *need* is followed by a *to*-infinitive. There were 56 examples of *all need to* in the BNC. By contrast, there was no example of lexical *need* preceding quantificational adjuncts. Therefore in the BNC there were 0 tokens for *needed both* plus bare infinitive, *needed each* plus bare infinitive or *needed all* plus bare infinitive.[13]

[12] For combinations with a *to*-infinitive see section 4.10.
[13] For combinations with a *to*-infinitive see section 4.10.

(71) a) *Quite simply, we all need to make things much tougher for the criminal.* [ARA22]

b) *We all need know whether she is or* [KC9 7138]

As for modal *need*, it only occurs in non-affirmative contexts. Therefore there were practically no instances of it occurring in a position either preceding or following quantificational adjuncts in the BNC. Of all the quantificational adjuncts I tried, only *all need* plus bare infinitive produced 1 relevant token[14], as is shown in (71b). (71b) was the only one of this kind in the whole corpus and is incomplete. What is more important, the sentence violates the principle that modal auxiliary *need* only occurs in affirmative contexts. For this reason I have also tried searching for *need not* followed by a bare infinitive and either preceded or followed by a quantificational adjunct (*all*, *both*, *each).* However, not even this method did produce any results in the BNC.

To sum up, the BNC confirmed that there are two variants of *need* which can be distinguished by their different position with respect to adverbs. However, because of the possibility of the modal auxiliary *need* occurring both in pre-adverbial and post-adverbial position, other factors have to be taken into consideration, such as the bare/*to*-infinitive. On the other hand, if *need* occurs before an adverb or a quantificational adjunct, one can be sure that it is the modal auxiliary one.

As for the position of quantificational adjuncts, the BNC only confirmed that lexical *need* follows quantificational adjuncts. There were no instances of modal *need* either preceding or following quantificational adjuncts. See Table 7 on the next page.

[14] The combinations with the other quantificational adjuncts produced either 0 tokens or a few tokens which were, however, irrelevant.

Table 7

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7

4.6 Clitic forms[15]

The conclusion in (33) was that lexical verbs are morphologically less flexible than their auxiliary counterparts. This rigidity is reflected in the absence of their contracted forms, namely negative and clitic forms. By contrast, auxiliary verbs can take on these forms.

However, as mentioned earlier, one of the three differences between modal *need* and the rest of the English modals is the fact that it lacks any clitic forms (see [6] in chapter 4). Therefore I could not find it in the BNC and the example sentence below is illustrational only. Example (72) illustrates the inability of *need* to appear in a clitic form.

(72) **John ´d (need) not worry about this issue.*

The conclusion is that the property related to clitic forms cannot be used to differentiate between the lexical and modal *need* due to the fact that neither of these two variants have it.

[15] I did not include the "Methodology" section because I could not search for a form which does not exist.

Table 8

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7
Ability to assume clitic forms	−	−	(33) 2.8

4.7 Existential *there*

In (39) I noted that it is characteristic of auxiliary verbs to appear in the existential *there* construction. However, it is not typical of lexical verbs, although it ought to be recognized that sometimes even lexical verbs occur in this construction.

4.7.1 Methodology

Searched constructions:

there need be
there need to be
there needs be

Queries for all of the constructions are of the same type as the Phrase Query in Figure 2
.

4.7.2 Results

After testing this criterion in the BNC, I came to the conclusion that the existential *there* property proves insufficient for differentiating between lexical and auxiliary *need*. The reason is the fact that it occurs with both *need to* and *need* plus bare infinitive. Surprisingly, the lexical variant is more frequent.

(73) a) *There need be no trouble.* [ALX 957]

b) *If this approach is to be successful there need to be benefits to the wife, the farmer, and the farm.* [ALC 775]

c) *And so there needs to be a way forward to break this argument.* [JJF 176]

There were 41 tokens in the BNC of *there need be* (73a), 11 tokens of *there need to be* (73b) and 110 tokens of *there needs to be* (73c). This time I analysed all 110 tokens, in one of the tokens the *s* ending was wrongly followed by a plural noun. In total, there were 121 tokens of lexical *need* occurring in the existential *there* construction, while only 41 tokens of modal *need*. The conclusion is that the existential *there* criterion is unreliable and does not help in differentiating between the lexical and modal auxiliary variants of *need*. See Table 9 on the next page.

Table 9

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7
Ability to assume clitic forms	−	−	(33) 2.8
Occurrence in the existential *there* construction	+ (121)	+ (41)	(39) 2.9

4.8 Uniqueness of the Modal Paradigm

In (45) I stated that modal auxiliary verbs only have primary forms. Lexical verbs and non-modal auxiliaries are not affected by these limitations, i.e. they can have both primary and secondary forms. One would assume that if modal auxiliary verbs have primary forms, which include the present and the preterite form, then modal *need* should also have a preterite form. However, in chapter 4 I mentioned the non-existence of a preterite form of modal *need* (see [6]). I deal with this issue in detail in chapter 4.9.2.

4.8.1 Methodology

List 1

The queries for the constructions in List 1 are analogous to Phrase Query in Figure 1.

needed directly followed by a bare infinitive
he need directly followed by a bare infinitive

List 2

The queries for the two constructions in List 2 are analogous to the Query Builder query in Figure 2.

to need to
he needs to

List 3

As for the construction in List 3, I used the Query Builder query of the type illustrated in Figure 3 below.

need in bare infinitive (directly preceded by a modal auxiliary verb) directly followed by a bare infinitive

In order to find an instance of *need* in bare infinitive (i.e. not preceded by *to*), I had to make sure that it is directly preceded by a modal auxiliary verb. Therefore I used the Query Builder and in the first content node I selected the option VM0, which stands for modal auxiliary verbs. The rest of the query is analogous to Figure 1, i.e. *need* in the second content node is directly followed by VBI, VDI, VHI and VVI, which are all in the third content node. The links between the three nodes were specified as NEXT. See Figure 3 below.

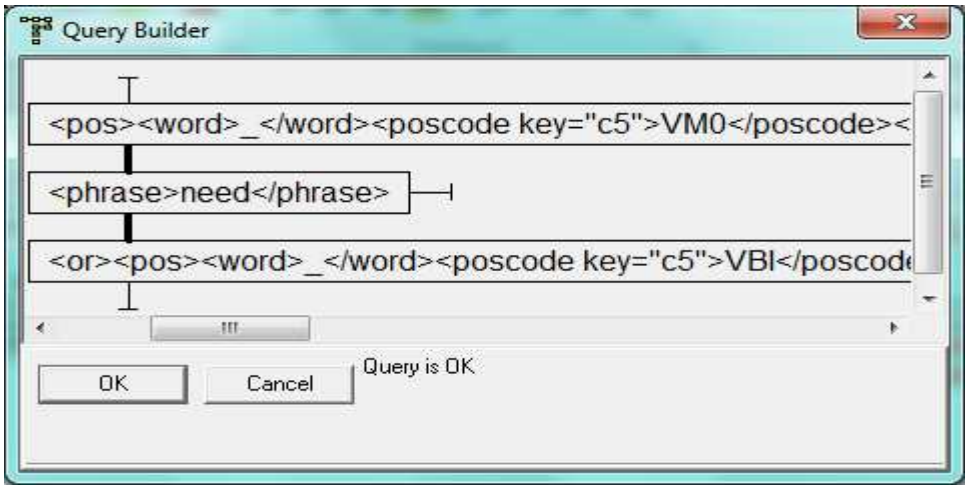

Figure 3: The screenshot of the query for *need* in bare infinitive directly followed by a bare infinitive

4.8.2 Results

The results from the BNC confirm the above stated characteristics regarding secondary forms. As for modal auxiliary *need*, its grammatical behaviour confirms the assumption made by theoretical manuals, i.e. it does not have any secondary forms. There were only two examples of the secondary forms of *need* followed by a bare infinitive in the BNC, (74a) and (74b). Lexical *need* can of course assume secondary forms (74c).

(74) a) *…and all they would need do is put it aside and think pure thoughts.* [CDV 155]

b) *Well it's really that's needed be here, you know, if we ca* [KBD 3981**]**

c) *However, he is likely to need to rest at frequent intervals.* [ASO 446]

As stated above, there were 2 tokens of the secondary forms of *need* followed by a bare infinitive, as in (74a) and (74b). (74a) is an instance of *need* in bare infinitive that is followed by a bare infinitive. The fact that it is preceded by a modal auxiliary (and thus is in bare infinitive) means that it is a secondary form and therefore a lexical verb. (74b) is the past participle *has needed* followed by a bare infinitive. This example was searched as *needed* followed by a bare infinitive. The fact that both of the secondary forms are directly followed by a bare infinitive means that they are examples of the *need* blend (more in section 4.10). As for lexical *need*, the BNC confirms that it does have secondary forms. There were 63 tokens of *to need to* in the BNC (74c).

As for the 3rd person agreement, in (49) it was observed that the morphology of the modal auxiliary verbs is not affected by the 3rd person singular. Therefore no bound morpheme gets attached to them even when they refer to the 3rd person in the present tense. Lexical verbs and non-modal auxiliaries, on the other hand, are marked for 3rd person singular. The assumption is that there are two verbs *need*, one of which is not marked for 3rd person agreement, while the other does display 3rd person agreement. The former is a modal auxiliary (75a), the latter is a lexical verb (75b).

(75) a) *He need have no trace of conscience at all.* [FYY 766]

b) *They're the only ones he needs to rescue.* [KJU 150]

The fact that (75a) is a modal auxiliary is supported by two characteristic features – apart from not displaying 3rd person agreement, it is directly followed by a bare infinitive. As for (75b), the lexical *need* is marked for 3rd person singular and is directly followed by a *to*-infinitive. Both of the properties characterize the *need* in question as lexical.

The query I designed produced 16 examples of *he need* plus bare infinitive and 196 examples of *he needs to*.

According to the BNC, there are two different verbs *need* which can be differentiated regarding the 3rd person agreement. The modal auxiliary one does not display it, the lexical one does. As the above given numbers suggest, lexical *need* is far more frequent that the modal one.

Table 10

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7
Ability to assume clitic forms	−	−	(33) 2.8
Occurrence in the existential *there* construction	+ (121)	+ (41)	(39) 2.9
Having only primary forms and not displaying 3rd person agreement	−	+ (16)	(45), (49) 3.2, 3.3

4.9 Remote conditionals and preterite

According to the conclusion drawn in (55), only modal auxiliary verbs can occupy the first verbal position in the apodosis part of the remote conditional. However, lexical and non-modal auxiliary verbs cannot appear in this position. According to Huddleston, occurrence of *need* in a remote apodosis is possible in a past time conditional marked by *have* (Huddleston and Pullum 2002, 110). By contrast, lexical *need* (like lexical verbs I general) cannot occur as a first verb of the apodosis part of a remote conditional. However, neither of these claims can be proven due to the corpus limitations.

As I observed in (59), when Modal auxiliary verbs occur in main clauses in their preterite forms, they can refer to the past or the modal remoteness. Their present forms refer either to the present or the future time. By contrast, lexical and non-modal auxiliary verbs are more limited in that their preterite forms in main clauses only refer to the past. As for modal *need*, however, the situation is different. In chapter 4 I mentioned the non-existence of a preterite form of modal *need* (see[6]) which also results in the modal remoteness use of the preterite not being possible, as in (76).

(76) **Needed you move the table now?*

This example is wrong because there is no preterite form for modal *need*. In order to demonstrate the ungrammaticality, I had to make one up.

With respect to the preterite form *needed*, Huddleston also maintains that the distinction between auxiliary and lexical *need* is preserved. He claims that *needed* is always lexical because it cannot be found in the NICE constructions (Huddleston and Pullum 2002, 111). This means that:

i) except for non-verbal negation and non-imperative negation (more in section 2.3), *needed* can never be directly followed by the negative particle *not*, as can be seen in (77).

(77) **We needed not ask their opinion.*

.

ii) *needed* cannot invert with the subject, as in (78). For more information see section 2.4.

(78) **Needed John act like that*?

iii) *needed* cannot be stranded (79). For information on stranding see section 2.5.

(79) **Mary needed get some fresh air and so needed I.*

iv) the negative or positive polarity of *needed* can never be emphasized (80). Emphatic polarity is dealt with in section 2.6.

(80) **That´s not true: we NEEDED get their help.*

All the constructions in (i)-(iv) are characteristic of auxiliary verbs and the fact that *needed* cannot be found in them means that under no circumstances is *needed* an auxiliary.

4.9.1 Methodology

Searched constructions:

needed directly followed by a bare infinitive
he needed to

The Query Builder query for *needed* directly followed by a bare infinitive is analogous to the one in Figure 1. The Phrase Query for *he needed to* is of the same type as the one in Figure 2.

4.9.2 Results

In his bachelor thesis Peter Vaňušanik maintains that "both lexical and modal auxiliary variants have distinct the preterite forms needed/NEEDED…" (Vaňušanik 2011, 35). However, as I mentioned in both chapter 4 and this chapter (4.9), Huddleston maintains that modal auxiliary *need* has no preterite form, which results in the modal

remoteness use of the preterite not being possible (Huddleston and Pullum 2002, 110). I have not managed to find Peter Vaňušanik´s example *She needed refuse you* in the corpus.

The non-existence of any preterite form of modal auxiliary *need* can be proved by searching for *needed* followed by a bare infinitive. Indeed, the BNC showed only 1 irregularity (81).[16] The other example of this kind was a secondary form *has needed*, which was dealt with in the previous section 4.8.

(81) *…but you made things far worse than they needed be,' Luke retorted.* [HGT 2885]

Therefore the BNC confirms the supposition that modal auxiliary *need* has no preterite form and hence cannot be used in the modally remote preterite. As mentioned in 3.6, lexical verbs (and therefore lexical *need*) cannot appear in modally remote preterite in main clause. Due to the corpus limitations, it cannot be proven in the BNC. However, the preterite form itself can be used to differentiate between lexical and modal auxiliary *need*. As documented by the example below, lexical *need* obviously has the ability to assume a preterite form (82).

(82) *He realised too that he needed to know about both*. [HWP 757]

There were 261 solutions for *he needed to* in the corpus. I had to include *he* in the query to make sure that the search engine does not look for forms like *is/have needed*, which are secondary forms. To sum up, there are two different variants of *need* as far as the preterite form is concerned. Modal auxiliary *need* does not have a preterite form, while lexical *need* has it. See Table 11 on the next page.

[16] This counterexample can be considered as an instance of the *need* blend. See 4.10.

Table 11

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7
Ability to assume clitic forms	−	−	(33) 2.8
Occurrence in the existential *there* construction	+ (121)	+ (41)	(39) 2.9
Having only primary forms and not displaying 3rd person agreement	−	+ (16)	(45), (49) 3.2, 3.3
First verb in the apodosis part of the remote conditional Having no preterite form	− −	− +[17]	(55), (59) 3.5, 3.6

4.10 Subcategorisation: Bare infinitival complement

Due to the fact that in this section I come to the final conclusion regarding *need*, I decided to move it to the end of the practical part. According to the rule mentioned in (53), modal auxiliary verbs are directly followed by bare infinitival complements, while lexical and non-modal auxiliary verbs are not. Therefore I assume that modal auxiliary *need* and lexical *need* also differ in this way.

[17] There were no examples of a preterite form of modal *need*.

4.10.1 Methodology

List 1

The Query Builder queries for constructions in List 1 are analogous to the one in Figure 1.

Need directly followed by a bare infinitive
Did not need directly followed by a bare infinitive
Does not need directly followed by a bare infinitive
Do not need directly followed by a bare infinitive
Did I/you/he/she/it/we/they need directly followed by a bare infinitive
Do I/you/we/they need directly followed by a bare infinitive
Does he/she/it need directly followed by a bare infinitive
Do need directly followed by a bare infinitive
Does need directly followed by a bare infinitive
Did need directly followed by a bare infinitive
Needs directly followed by a bare infinitive
Have/has/had/is needed directly followed by a bare infinitive
To need directly followed by a bare infinitive
Needing directly followed by a bare infinitive
Needed directly followed by a bare infinitive

List 2

The Phrase Queries for constructions in List 2 are analogous to the one in Figure 2.

Need to
Need not to
need I to
need you to
need he to
need she to
need it to (inversion)
need we to
need they to

Need hardly to

Need all to

Need each to

Need both to

List 3

The Query Builder query for the construction in List 3 is of the same type as the one in Figure 3.

Need in bare infinitive directly followed by a bare infinitive

4.10.2 Results

There were 732 examples of *need* directly followed by a bare infinitive (83a). Of the 100 examples I analysed, 96 of them were examples of *need* followed by a bare infinitive. In the other four *need* was not directly followed by its bare infinitival complement but by other phrases (for example a noun phrase). There were 21 943 solutions for *need to* in the BNC (83b).

(83) a) *But as I said they need have no fear.* [K6M 176]

b) *No you do not need to go in the shower.* [KB8 1528]

The two examples are a proof that there are two variants of *need*. The modal auxiliary one is followed by a bare infinitive (which is a sign characteristic of modal auxiliary verbs) and it occurs in a non-affirmative context. The lexical one has a *to*-infinitive (which is typical of lexical verbs). Apart from the *to*-infinitive, lexical *need* is signalled by the *do*-support. The lexical variant is much more frequent than the modal auxiliary one.

As is suggested by the previous sections, the most reliable criterion that was always present in all of the constructions is the *to*/bare infinitival complement. Therefore I am going to combine it with the other relevant criteria in an attempt to prove that there are two variants of *need* which always follow the same pattern of behaviour. Moreover, in section 4 I mentioned that there are indications that the *need* blend may actually appear. I also added that the blend usually manifests itself by lacking the *to*-

infinitive, but otherwise having properties which are characteristic of lexical *need*. Below is the list of 5[18] criteria (including the results) which I combined with the bare infinitival complement property. The other 4 properties were not included for reasons mentioned throughout chapter 4. Some of them were inapplicable to *need* (clitic forms), some proved unreliable (existential *there*), and some cannot be used due to the corpus limitations (code, remote conditionals). I did include the criterion related to the position before adverbs and quantificational adjuncts because it excludes lexical verbs. Post-adverbial position is unreliable because it can be occupied both by lexical and modal auxiliary verbs (although less frequently). Quantificational adjuncts did not occur in combination with modal *need* in the BNC (see section 4.5).

a) **Primary verb negation**

Did not need directly followed by a bare infinitive: 0 tokens

Does not need directly followed by a bare infinitive: 0 tokens

Do not need directly followed by a bare infinitive: 0 tokens

Need not to: 0 relevant tokens[19]

b) **Subject-auxiliary inversion**

Did I/you/he/she/it/we/they need directly followed by a bare infinitive: 0 tokens

Do I/you/we/they need directly followed by a bare infinitive: 0 tokens

Does he/she/it need directly followed by a bare infinitive: 0 tokens

need I to: 0 tokens

need you to (inversion): 0 tokens

need he to: 0 tokens

need she to: 0 tokens

need it to (inversion): 0 tokens

need we to: 0 tokens

need they to: 0 tokens

c) **Emphatic polarity**

Do need directly followed by a bare infinitive: 0 tokens

[18] Negation, inversion and emphasis can be considered as one property related to *do*-support.
[19] I had to disregard instances of non-imperative negation (see section 2.3).

Does need directly followed by a bare infinitive: 0 tokens

Did need directly followed by a bare infinitive: 0 tokens

d) **Pre-adverbial position and position before quantificational adjuncts**

Need hardly to: 0 tokens

Need all to: 0 tokens

Need each to: 0 tokens

Need both to: 0 relevant tokens[20]

e) **No 3rd person agreement**

Needs directly followed by a bare infinitive: 3 tokens

f) **Only primary forms**

Have/has/had/is needed directly followed by a bare infinitive: 1 token

Need in bare infinitive directly followed by a bare infinitive: 1 token

To need directly followed by a bare infinitive: 0 tokens

Needing directly followed by a bare infinitive: 0 tokens

g) **Preterite form**

Needed directly followed by a bare infinitive: 1 token

As for the methods of searching, I always designed improbable combinations in order to rule out any exceptions. For example, I searched for *do not need* plus bare infinitive. I did not have look for *do not need to* because the existence of this construction is predictable and was proved in one of the previous corresponding sections (in this case in section 2.3).

Of all the methods I tested, only these three produced very few results: *(is) needed* directly followed by a bare infinitive (84a, b), *needs* directly followed by a bare infinitive (84c) and *need* in bare infinitive directly preceding a bare infinitive (84d).

[20] All of the 3 tokens in the BNC were irrelevant because *need* was a noun, not a verb.

(84) a) *Well it's really that's needed be here, you know, if we ca* [KBD 3981]

b) *…but you made things far worse than they needed be,' Luke retorted.* [HGT 2885]

c) *…and that the aim of none of them needs be very precise.* [H0E 18]

d) *…and all they would need do is put it aside and think pure thoughts.* [CDV 155]

As mentioned above, there were only 2 examples of *needed* followed by a bare infinitive, one of them was in affirmative context, the other in non-affirmative context. Moreover, one of them was an example of a secondary form (past participle) *has needed* (84a),[21] the other of a primary (preterite) form *needed* (84b).[22] As for *needs* followed by a bare infinitive (84c), there were only 3 relevant results. The rest (34 results) were examples of an archaic expression *must needs*. There was 1 example of *need* in bare infinitive and preceding a bare infinitive (84d).[23] The fact that *need* is in bare infinitive suggests that it as a lexical verb. On the other hand, the lack of a *to*-infinitive is characteristic of modal verbs. Therefore I conclude that it is an instance of the *need* blend.

In total, I have managed to find 6 examples of the third variant of *need* – the *need* blend. Huddleston´s assumption that "*to* is only exceptionally omitted with lexical *need*" has been proven by the BNC (Huddleston and Pullum 2002, 111).

See Table 12 on the next page.

[21] See chapter 4.8.
[22] See chapter 4.9
[23] See chapter 4.8.

Table 12

	Lexical *need*	Modal *need*	Definition number Section
Negation by means of *not*	−	+ (1979)	(4) 2.3
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4
Ability to occur in code constructions	−	+ (7)	(20) 2.5
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7
Ability to assume clitic forms	−	−	(33) 2.8
Occurrence in the existential *there* construction	+ (121)	+ (41)	(39) 2.9
Having only primary forms and not displaying 3rd person agreement	−	+ (16)	(45), (49) 3.2, 3.3
First verb in the apodosis part of the remote conditional Having no preterite form	− −	− +	(55), (59) 3.5, 3.6
Subcategorisation: Bare infinitival complement	− / + (6)[24]	+ (732)	(53) 3.4

[24] I managed to find 6 examples of the irregular behaviour of *need*. In all of the examples lexical *need* was followed by a bare infinitive. Therefore I conclude that they are instances of the *need* blend.

5 CONCLUSION

Table 13 below sums up the results of the previous sections.

Table 13

	Lexical *need*	Modal *need*	Definition number (section)
Negation by means of *not*	−	+ (1979)	(4) 2.3, 4.1
Possibility of inversion of subject and verb	−	+ (36)	(16) 2.4, 4.2
Ability to occur in code constructions	−	+ (7)	(20) 2.5, 4.3
Exclusion of auxiliary *do* in the case of emphatic polarity	−	+	(25) 2.6, 4.4
Position before adverbs and quantificational adjuncts	−	+ (43)	(30) 2.7, 4.5
Ability to assume clitic forms	−	−	(33 2.8, 4.6
Occurrence in the existential *there* construction	+ (121)	+ (41)	(39) (2.9, 0)
Having only primary forms and not displaying 3rd person agreement	−	+ (16)	(45), (49) 3.2, 3.3, 4.8
First verb in the apodosis part of the remote conditional Having no preterite form	− −	− +	(55), (59) 3.5, 3.6, 4.9
Subcategorisation: Bare infinitival complement	− / + (6)	+ (732)	(53) 3.4, 4.10

As mentioned in chapter 4.10, not all of the properties are reliable. As for clitic forms, neither lexical nor modal variant of *need* have these forms. Therefore they cannot be distinguished on the basis of this criterion. Regarding the existential *there* criterion, both lexical and modal *need* can occur in construction with existential *there*. For this reason, this criterion is unreliable. The criterion related to remote conditionals cannot be verified in the corpus. With respect to code, only the modal variant can be verified in the BNC. I did not manage to find a way of proving that lexical *need* requires *do*-support in the code construction. This, however, does not mean that the code criterion is unreliable. According to theoretical manuals there are no exceptions and lexical *need* always requires *do*-support in code constructions.

The rest of the criteria are both reliable and can be verified in the BNC. However, the problem is that the majority of them are not visible all the time. For example, *needs* only occurs in third person agreement and the preterite form *needed* is likewise not always present. *Do*-support is not required in positive declarative and non-emphasized sentences. Similarly, adverbs and quantificational adjuncts are not present all the time. Secondary forms are not always present as well.

The only criterion that is reliable in most cases (disregarding the tiny number of exceptions) and that is present in all circumstances is the *to*/bare-infinitival property. Considering all the sections of the practical part of my thesis (chapter 4), this is the property that always participated in all of the constructions. Using the bare infinitival complement property in the final section 4.10, I combined it with the other five criteria and came to the conclusion that there are three variants of the verb *need* (including the *need* blend). The lexical variant is followed by a *to*-infinitive and the modal auxiliary one has a bare infinitive. Lexical *need* is further divided into two variants – one of the variants is a regular lexical verb because it is followed by a *to*-infinitive and the other one is followed by a bare infinitive (the *need* blend). The number of examples of the *need* blend (the one lacking the *to*-infinitive) is significantly low. I managed to find 6 instances: the secondary form of lexical *need* (*has needed*) followed by a bare infinitive (1 example), the secondary form in which *need* is in bare infinitive (*would need*) followed by a bare infinitive (1 example), preterite form (*needed*) followed by a bare infinitive (1 example) and lexical *need* in 3rd person agreement (*needs*) followed by a bare infinitive (3 examples).

Therefore the final results from 4.10 support the hypothesis that there are two basic variants of *need*: lexical and modal. The lexical variant can be further divided into two variants: a lexical verb and a blend. The lexical verb has all the properties which are characteristic of lexical verbs. Regarding the blend, the one property which distinguishes it from the lexical variant is the bare infinitive.

6 SUMMARY

In my bachelor thesis I concentrated on the system of English verbs, primarily on the verb *need* and the distinction between its lexical and modal auxiliary variants. To sum up, the results of the chapters of the practical part of my thesis are listed below.

Primary verb negation (see section 4.1)

There are two different variants of *need*. Of of them forms negation by means of dummy *do* and the addition of the negative particle *not*, which is characteristic of lexical verbs. The other one behaves like an auxiliary verb because it only requires the negative particle *not*.

Subject-auxiliary inversion (see section 4.2)

The verb *need* appears in two forms in inverted constructions. One of the forms follows the auxiliary verbs pattern of inversion because it does not require the *do*-support. The latter form displays the property typical of lexical verbs – it needs auxiliary *do* to undergo inversion.

Code (see section 4.3)

There are two different variants of *need* with respect to their need of *do*-support in the code constructions. One of them behaves like an auxiliary because it can be stranded and subsequently be used in code constructions. It differs from the one which cannot be stranded and therefore can be categorised as a lexical verb. However, the fact that lexical *need* requires *do*-support in the code constructions cannot be verified in the BNC.

Emphatic polarity (see section 4.4)

There is a variant of *need* which syntactically behaves like lexical verbs in that it requires auxiliary *do* in order to be emphasized. The other reason for concluding that it

is lexical is the fact that it has a *to*-infinitive. Although not supported by the BNC, there is supposed to be a modal auxiliary variant of *need* which does not require *do*-support when its negative polarity is emphasized. Instead, the stress is placed on the negative particle *not*.

Position of adverbs and quantificational adjuncts (see section 4.5)

There are two variants of *need* which can be distinguished by their different position with respect to adverbs. However, because modal auxiliary *need* can occur both in pre-adverbial and post-adverbial position, other criteria should be considered, such as the bare/*to*-infinitive. However, if the position of *need* is before an adverb or a quantificational adjunct, it is the modal auxiliary one.

Regarding the position of quantificational adjuncts, I only managed to find examples of lexical *need* following quantificational adjuncts. There were no instances of modal *need* either preceding or following quantificational adjuncts, although this should theoretically be possible in non-affirmative contexts.

Clitic forms (see section 4.6)

Modal auxiliary *need*, like the lexical one, does not have any clitic forms. Therefore this property cannot be used to differentiate between lexical and modal auxiliary *need*.

Existential *there* (see section 4.7)

The existential *there* property is unreliable and does not help in differentiating between lexical and modal auxiliary *need*. This is because it occurs with both *need to* and *need* plus bare infinitive.

Uniqueness of the Modal Paradigm (see section 4.8)

Regarding primary and secondary forms, lexical *need* behaves like other lexical verbs in that it has secondary forms. By contrast, the grammatical behaviour of modal

auxiliary *need* confirms the assumption made by theoretical manuals, i.e. it does not have any secondary forms.

As for the 3rd person agreement, there are two different verbs *need* with respect to the 3rd person agreement. The modal auxiliary *need* is not marked for the 3rd person agreement, but the lexical one is.

Remote conditionals (see section 4.9)

Modal auxiliary *need* has no preterite form and hence cannot be used in the modally remote preterite. Lexical *need*, like lexical verbs in general, does not occur in modally remote preterite in main clause, although it cannot be proved because of the technical limitations in the BNC. Nevertheless, the preterite form *needed* may serve as a tool for differentiating between the lexical and modal auxiliary variant of *need*.

Subcategorisation: Bare infinitival complement (see section 4.10)

In this final chapter I came to the conclusion that there are two variants of *need*, one of them is followed by a bare infinitive, which is characterictic of modal auxiliaries. The other one has a *to*-infinitive and therefore resembles a lexical verb.

By combing the bare infinitival criterion with other criteria, I verified the fact that there is a lexical *need* and a modal auxiliary *need*. The grammatical behaviour of *need* is mostly regular because it follows either the properties characteristic of the lexical class, or the ones which are typical of the modal auxiliary class. There was only a very small number of exceptions (6) in which the *need* blend occurred.

7 SHRNUTÍ

Ve své bakalářské práci jsem se zabýval systémem anglických sloves a jejich rozdělením do kategorie lexikální, pomocné a modální. Zaměřil jsem se na sloveso *need*, jehož zásadní odlišnost od většiny ostatních anglických sloves spočívá v tom, že se vyskytuje ve dvou variantách. Tyto varianty vykazují syntaktické a morfologické vlastnosti typické jak pro lexikální, tak pro modální slovesa. Mým cílem bylo za použití jazykového korpusu dokázat, že tyto protikladné vlastnosti se nevyskytují nahodile, ale že jejich výskyt je spjat s tím, o jakou variantu se jedná. Přestože základním předpokladem bylo, že existují dvě varianty, pokusil jsem se také potvrdit nebo vyvrátit hypotézu, podle které se výjimečně vyskytuje i třetí varianta, která v sobě slučuje vlastnosti typické jak pro lexikální, tak modální slovesa (tzv. "blend").

V praktické části své práce jsem došel k závěru, který potvrzuje hypotézu o existenci dvou homonymních sloves *need*, která se od sebe formálně liší. V závěrečné kapitole jsem shrnul vlastnosti, které jsou pro rozlišení obou druhů slovesa spolehlivé a zároveň se dají ověřit v jazykovém korpusu. Hlavním nedostatkem většiny vlastností ovšem byla skutečnost, že se vyskytují pouze v určitých kontextech. Příkladem je koncovka *s*, která se k lexikálnímu *need* připojuje pouze ve třetí osobě jednotného čísla přítomného času. Na základě výzkumu, který jsem provedl v praktické části, jsem došel k závěru, že jediným spolehlivým kritériem, které se zároveň vyskytuje vždy, je kritérium týkající se holého infinitivu. V poslední kapitole jsem toto kritérium zkombinoval s ostatními vlastnostmi, abych zjistil, jestli existuje i výše zmíněná třetí varianta. Nepravidelné chování slovesa *need* se projevilo ve spojení se třemi vlastnostmi: shoda ve třetí osobě jednotného čísla přítomného času (3 výskyty), pouze primární formy (2 výskyty) a préteritní forma (1 výskyt). Ve všech třech případech bylo sloveso *need* následováno holým infinitivem, což je vlastnost typická pro modální slovesa. Pokud jde o vlastnosti lexikální, tak v prvním případě mělo sloveso *need* koncovku *s* (*needs* a holý infinitiv), ve druhém případě se objevilo v sekundárních fomách (v holém infinitivu *would need* a příčestí minulém *has needed*, obojí následováno holým infinitivem) a ve třetím případě v préteritní formě (*needed* a holý infinitiv). Proto jsem došel k závěru, že existuje i třetí varianta *need*, tzv. "blend". Tato třetí varianta se ovšem vyskytuje velmi zřídka – podařilo se mi nalézt pouze 6 výskytů.

8 ANOTACE

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Název práce: Formal properties of English modal verbs

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Klíčová slova: need, lexical verbs, auxiliary verbs, modal auxiliary verbs, primary verbs negation, subject-auxiliary inversion, code, emphatic polarity, position of adverbs and quantificational adjuncts, negative forms and clitic forms, independence of subject, only primary forms, no 3rd person agreement, bare infinitival complement, remote conditionals, modally remote preterite

Charakteristika diplomové práce: Tato bakalářská práce se zabývá vlastnostmi anglických modálních sloves, jmenovitě slovesem *need* (*potřebovat*) a zařazením jeho variant do kategorie lexikálních a modálních sloves. Tyto varianty činí sloveso *need* vzhledem k většině ostatních anglických sloves ojedinělým. Teoretické poznatky o slovese *need* jsou získány z gramatických příruček od Huddlestona a Pulluma a Quirka et al. a jsou následně ověřeny v Britském národním korpusu. Takto získané výsledky umožňují přesnější klasifikaci slovesa *need* s ohledem na množství jeho variant a jeho odlišnosti od ostatních anglických sloves.

Characteristics of the diploma thesis: This bachelor´s diploma thesis deals with the characteristics of the modal auxiliary verbs. In particular, it concentrates on the English verb *need* and the subcategorisation of its variants into the lexical and modal auxiliary

categories. These variants make the verb *need* unique with respect to the majority of other English verbs. Theoretical information regarding the verb *need* is gained from the grammar manuals by Huddleston and Pullum and Quirk et al. This information is then tested in the British National Corpus and the results enable a more accurate classification of the verb with respect to the number of its variants and its dissimilarities from other English verbs.

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