The Semantic Scope of Negation in English and Arabic: A Contrastive Study

Israa Jom'ah AMa'aitah
Department of English Language and Literature
Mu'tah University, Jordan
E-mail: israamaaitah@yahoo.com

Abstract
This is a contrastive study of the semantic scope of negation in English and Arabic. It investigates how similar or how different the meanings of the negative ambiguous sentences are in English and Arabic in their syntactic and semantic behavior. Since modals have unexpected behavior under negation, this study is concerned with the scope of modal negation. The researcher studies the negation of other syntactic aspects such as quantifiers, adverbials, subordinate clauses, prepositional phrases and others with reference to intonation to show how important it is to reduce ambiguity in certain negated sentences dealing with it as a grammatical phenomenon not as a phonological one. The researcher adopted the contrastive analysis in order to explore the points of similarities and the points of differences between the two selected contrasted categories (the scope of English and Arabic negation). The findings show that there are considerable number of similarities and differences of the scope of negation in English and Arabic. More importantly, the results show that the scope of modal auxiliaries negation differs in both languages in that in Arabic it is obvious and is easy to perceive straightway rather than in English. It is marked, in Arabic, by the position of the negative particle which negates whatever follows it while in English there is no formal way to define whether it is the main verb or the modal auxiliary that is negated. The results also show that intonation plays a role in determining the scope of negation in English and Arabic sentences.

Key words: Semantic, Negation, Comparative, Quantifiers, Adverbials, Subordinate Clauses.

1. Introduction

Every natural language has certain categories or structures, since they relate to the cognitive processes, which are expressed in one way or another. This basic assumption is so-called linguistic universals. Negation is one of the linguistic universals that are found in English, Arabic, and among others. Horn (1989: xiii) states, “all human systems of communication contain a representation of negation”. Bernini and Ramat (1996:1) also argue, “Yet it is a fact that there is no known language which does not have some means or another of expressing negation”. Negation is a subject of variation across languages. Every language has its own syntactic, semantic and morphological devices expressing negation. A great deal of research has been conduct by English and Arab linguists on the similarities and differences of negation in the two languages. This paper does not however study negation in its wide sense but rather it focuses on a special aspect that is the semantic scope of negation in English and Arabic. This topic is related to the semantic interpretation of ambiguous sentences including negation with certain grammatical aspects. Smith (1975, cited in Al-Omari 2008) argues that unambiguous sentences become ambiguous when they are negated. So, sentence 1.a is unambiguous whereas sentence 1.b is ambiguous. Consider the following examples:

1. a. Mary ran until dark.
1. b. Mary didn’t run until dark.

Sentence 1.b is not the opposite of 1.a because it might mean ‘Mary stopped running before it became dark’ or ‘Mary didn’t run until it became dark’. Modality is one of the most widely related aspects that have unexpected behavior under negation. Radden (2007: 224) argues that "The behavior of modal verbs is erratic when they occur with negation". The ambiguity arises not only because the same
modal might have more than one meaning but also because the negated modals might negate either the modality or the proposition. In other words, it is not always necessary that the negated modal verbs affect the modality but in certain cases the proposition of the sentence might be negated. These two terms will be distinguished in relation to negation in English and Arabic in this study. There are other aspects of grammar that have ambiguity under negation such as quantifiers, adverbials, subordinate clauses and others. These aspects are studied apart from modality in order to consider the role of intonation in eliminating their ambiguity. Horn and Kato (2000) argue that the ambiguity might be induced when two or more logical operators are linked in the sentence. They assert that phonology plays an essential role in eliminating this ambiguity. They say "they resolution of this ambiguity involves an array of factors, including phonological prominence, syntactic relations, and information structure." (Horn and Kato,2000: 8).

The relation between intonation and negation is a necessary one because it plays a crucial role in defining the extension of the scope of negation especially the falling and fall-rise tones. Actually, this study treats intonation as a grammatical aspect not as a phonological one.

2. Statement of the Problem

There are certain syntactic aspects that have unexpected behavior under negation in that the unambiguous sentences become ambiguous when they are negated. One of the most widely related aspects which has ambiguity under negation is the negation of modality in that it isn't always necessary that the negative modals affect the modality but in certain cases the proposition of the negative sentences might be negated. So the scope of modal negation is difficult to define in the negative sentences in that either the proposition or the modality might be negated. Consider the following examples:

1. you can't stay there.
2. He mustn't be at home.

Sentence 1 negates the modality. It means that "you are not allowed/permitted to stay there". While sentence 2 negates the proposition in that it means "it is necessary that he isn't at home". There are other syntactic aspects that have scope ambiguity under negation such as quantifiers, adverbials, subordinate clauses and others. The contrasts of meaning imparted by the scope of negation cannot be determined apriori. The analyst must compare and contrast the meaningful relations, the nuances of the variety of meanings which normally go unnoticed. El-Rashdan (forthcoming) gives the following example:

-؟انا لم افعل ذلك لأجلك.
اّب ىٌ افعو ذىل لأجيل
( = I didn’t do that for your sake )

This sentence has two interpretations. The first one, means that "I did that but not for your sake". The second one means that 'it was for your sake that I didn’t do that’. Linguists have extensively written about the domain/scope of negation in English including ambiguity of modality negation. The relationship between intonation and negation has also received its fair share in the writings of Halliday (1967), Bing (1979) and Cruttenden (1986). Little do we know, in contrast, about the scope of negation in Arabic, let alone the interplay between intonation and negation. This thesis is an attempt to bridge this gap. This study may help researchers to understand the relation between modality and negation on the one hand and intonation and negation on the other hand.

3. Research Questions

This study seeks to describe the scope of negation focusing on the modality system and the intonation system in English and Arabic. Consequently, it addresses the following research questions:

1. What is meant by the scope of negation in natural languages?
2. How does the scope of negation include and exclude the meaning of the modal auxiliaries?

3. What is the role of phonology especially intonation in delimiting the scope of negation in English and Arabic?

4. How is the scope ambiguity removed through the process of interpretation of the sentence?

4. Literature Review

Many linguists and grammarians have focused on the semantics of negative sentences such as Horn (1989), Quirk et al (1985), Frawley (1992), Bernini and Ramat (1996), Downing and Locke (2006) and Wu (2005).

It is essential to define the word ‘scope’ before talking about the scope of negation. Horn and Kato (2000: 8) define the word scope as “a semantic relation that holds between two or more logical operators in a sentence”. According to Quirk et al (1985:85) the word scope is “the general term used to describe the semantic influence which certain words have on neighboring parts of a sentence”. It deserves attention because of its close connection with the ordering of elements. The term scope refers to structural and semantic relation between certain operators, involving quantifiers, adverbial clauses, assertive and non assertive forms and others. Hence, the scope of negation seems to affect the whole sentence, a constituent or a word. So we can say that the scope of negation is the stretch of the utterance to which that negation applies.

Quirk et al (1985) define the scope of negation as follows "a negative item which may be said to govern a non assertive only if the latter is within the scope of the negative, i.e. within the stretch of language over which the negative item has a semantic influence." (Quirk et al, 1985: 787). Consider the following example:

Some people never send any Christmas cards.

In this sentence the non assertive form any is within the scope of negation because it follows not, while the assertive form some is not. Actually, the assertive and non assertive forms can’t be exchanged because each of them has its own syntactic domain (Quirk et al, 1985: 85). Consider the following example:

*Any people never send some Christmas cards.

Another important evidence that supports this idea is taken from Wu (2005), who says that the word order doesn’t play an important role in delimiting the scope of negation. In other words, the scope of negation is not controlled by the negative particle. Consider the following example:

I don’t teach because teaching is easy for me.

This sentence indicates that 'It is not because it is easy that I teach '. So, “what is negated is not the word right after the negative particle” (Wu,2005: 55). Downing and Locke (2006: 25) define the scope of negation as “the semantic influence that a negative word has on the rest of the clause that follows it”. They state that when the non-assertive forms occur after a negative form, they are always within the scope of negation. This explanation isn’t applied to the assertive forms because they stand outside the scope of negation when they occur after a negative particle (Downing and Locke (2006: 25). Consider the following examples:

He didn’t reply to any of my letters.
He didn’t reply to some of my letters.

In the first sentence, we may say that any is within the scope of negation, it means that none of my letters received a reply, while some stands outside the scope of negation in the second sentence, it means that some letters received a reply while others didn’t. They also explore that when the adverbs occurring before the negative particle, they fall outside the scope of negation. Whereas when they are clause-final, they fall inside the scope of negation Downing and Locke (2006: 25). Consider the following examples:
She didn’t explain the problem clearly.
She clearly didn’t explain the problem.
Koktova (1987, cited in Bernini and Ramat 1996: 3) defines scope as "that part of the sentence which is directly semantically influenced by the scoping expressions, e.g. for what is negative (e.g. not)". Givon (1975, cited in Bernini and Ramat 1996: 2) gives the following example:
He ran as fast as he could.
He didn’t run as fast as he could.
The affirmative sentence implies that he ran, but the negative sentence does not imply that he didn’t run, because the modal adverb ‘as fast as’ is within the scope of negation, it indicates that ‘he ran but not as fast as he could’. According to Frawley (1992) there are two types of the scope; narrow scope and wide scope. The former is used when it limits the meaning of the smallest part of a sentence that is grammatically possible; it takes scope over a limited number of the sentence’s constituents, while the latter is used when it qualifies the meaning of the largest part of a sentence that is grammatically possible; it takes scope over the sentence as a whole. Consider the old saying:
All that glitters is not gold.
This saying has two meanings. The first one which is the literal meaning negates the predicate (gold); it has a narrow scope. The second one negates the complete rest of the sentence; it has a wide scope in that it means not all that glitters is gold. Horn (1989) states that the same negated sentence might have both wide and narrow scope.
Every fish doesn’t sleep.
This sentence is ambiguous in that it has two readings. The first one with a narrow scope negation indicates that ‘there is a fish which doesn’t sleep’, while the second one with a wide scope negation indicates that ‘Not a fish sleeps’ (Horn, 1989: 491). We can say that all of the last definitions about the meaning of the scope of negation are closely related to each other. Most linguists and grammarians claim that the scope of negation is the semantic domain of the negative morpheme/particle. It is important now to define the scope of modality negation. Lyons (1977) argues that modality is concerned with the opinion and attitude of the speaker. First to be considered when we talk about the negation of modality is the distinction that can be drawn between negation of the modality and negation of the proposition, in other words we see either the modality is negated in a sentence or the proposition. Halliday (1976: 195) points out about the domains of the modal negation in that "either the modality or the thesis (which Palmer 1979 calls proposition) might be negated". Actually, this is considered one of the most important problems in the analysis of modality and negation.
Quirk et al (1985) maintain that there is a strong relationship between modal auxiliaries and negation in changing the scope of negation from one sentence to another. They argue that the scope of negation may or may not include the meaning of the modal auxiliaries, for example may may have more than one meaning; may in auxiliary negation has a different meaning from may in main verb negation. They give the following examples (Quirk et al, 1985: 794)

you may not smoke in here. (you are not allowed to smoke here)
They may not like the party. (It is possible that they do not like the party)

In the first sentence as the paraphrase shows the scope of negation includes the auxiliary or modality, whereas in the second sentence the scope of negation excludes the auxiliary or modality. Here we return to the two main types of the scope which are the narrow scope and the wide scope and we conclude that the wide scope is synonymous with auxiliary negation and narrow scope is synonymous with main verb negation. Auwera (2001) investigates the connection between modality and negation. He studied the negative modals and described his study as a study of negative collocations. For example, the collocations ‘must not’ and ‘need not’ have a different meaning of necessity. He gives the following examples (Auwera, 2001: 24):

John must not eat this soup today.
John need not eat this soup today.
The first sentence means that it is necessary not to eat, while the second one means that it is not necessary to eat. The difference between these verbs is the difference that signals the scope difference. There are two important kinds of negation related to the negation of modality, the first is external negation and the second is internal negation. Auwera says that "the term negation encompasses both external negation, with negation having scope over modality, and internal negation, with negation in the scope of modality" (Auwera, 2001: 24). This means that external negation is equivalent to negation of the modality and internal negation is equivalent to negation of the proposition. Consider the following examples:

He can’t go with them. ( external negation )
He mustn’t go with them. ( internal negation )

In the first sentence the whole proposition is negated, it indicates that ‘he is not allowed/ permitted to go with them’, while in the second sentence only the predicate is negated, it indicates that ‘it is necessary that he not go with them’. One of the most important issues that affect the scope of negation is its interrelationship with intonation. Hirschberg (2000) states that intonation is considered as one of the most important particles of language that remove the ambiguity of the negative sentences. She argues that:

"It is widely believed that syntactic and semantic ambiguities, such as the scope of negation and quantifiers, the association of focus sensitive operators, and the attachment of prepositional phrases, adverbials, and relative clauses can be disambiguated intonationally.” (Hirschberg, 2000: 87)

According to Cruttenden (1986) the word on which the nucleus falls is included in the scope of negation whereas the fall-rise accent is not included in the scope of negation but it limits the scope of negation. Consider the following sentences:

- She didn’t listen to anyone. “she listened to no one”
- She didn’t listen to anyone. “she listened but not to anyone, she listened to some people of her discretion.”

So, what is negated in the first sentence is what immediately came after the negative particle (listen to any one) and this is what we call the extensions of the scope of negation whereas in the second sentence the fall-rise limits the scope of negation so that it does not apply to the main verb. So, what is negated in the second sentence is only the assertive form (anyone). Halliday (1967) in his book Intonation and Grammar in British English asserts that there is a strong relation between intonation and negative sentences arguing that the falling tone (which he calls tone 1) in the sentence I didn’t come because he told me means that ‘it was because he told me that I didn’t come’, whereas the fall-rise tone (which he calls tone 4) in the same sentence indicates that ‘it wasn’t because he told me that I came’.

On the other hand, researchers who have studied modality in Arabic depend on the English modality system because there is no clear cut system of modality in Arabic. It should be argued that, grammatically, modality in its formal relation with modals, in Arabic, has not been paid attention to by Arab grammarians as a detached domain. Moreover, there is no single defined word that expresses modality and modals in Arabic. Two studies dealing with Arabic modality depending on the English system are worth mentioning namely El-Hassan (1990) in his article Modality In English and Standard Arabic: Paraphrase and Equivalence and Al-Masarwa (2000) in his thesis Modality In English and Arabic: Translational Equivalence.

El-Hassan (1990) conducts a study that aims at investigating the modals of expressing modality in Arabic depending on two major categories of English modality; epistemic and deontic by translating the English modals into modern standard Arabic. El-Hassan (1990) says that:
“Arabic does not seem to have grammaticalized modality, hence a variety of lexical items are used to express the meaning of a single English modal auxiliary”. (El-Hassan, 1990: 152)

He argues that the English sentence The manager may be at home might be translated by several Arabic equivalents. He gives among others the following possible translations in that yumkinu, yuhtamalu and rubbama are the Arabic equivalents of epistemic may:

- yumkinu ?an yakuuna lmudiiru filbayt, or
  يمكن أن يكون المدير في البيت
- yuhtamalu ?an yakuuna lmudiiru filbayt, or
  يتحمل أن يكون المدير في البيت
- rubbama yakuunu lmudiiru filbayt.
  ربما يكون المدير في البيت

He was concerned with the negation of epistemic and deontic modality in the two languages. He points out that the negative particle in Arabic negates whatever follows it, in contrast to English where the same negated modals might negate the proposition in certain cases or the modality in others. He argues that the scope of negation in Arabic is marked by the position of the negative particle. Consider the following examples:

- laa yumkinu ?an yakuuna lmudiiru filbayt
  لا يمكن أن يكون المدير في البيت
  = (it is not possible that the manager is at home)
- yumkinu ?an laa yakuna lmudiiru filbayt.
  يمكن أن لا يكون المدير في البيت
  = (it is possible that the manager is not at home)

It is obvious that the first sentence negates the modality while the proposition is affirmative. The second sentence negates the proposition while the modality is affirmative.

Al-Masarwa (2000) also conducts a study that deals with epistemic and deontic modality in English and Arabic by comparing English modal auxiliaries and Arabic expressions that indicate modality meanings including translation of English modals into Arabic and vice versa. He is also interested in the negation of modality in English and Arabic. He divides the negative expressions that express epistemic necessity into ‘Negative verbs’ such as laa yumkinu and laysa mina lmumkini and ‘Negated nouns’ such as laa budda and laa rayba. He asserts the fact that the negative particle in Arabic negates the elements that follows it, so it is obvious to determine whether the modality or the proposition is negated.

Esaa (1985) in his thesis studies negation in Arabic arguing that there is a strong interrelation between intonation and negation in Arabic. Consider the following example (al?raf: 71):

ألجابلوني في أسماء سغيبها أنتم وابنكم ما نرزَل الله بها من سلطان
= (Dispute you with me over names which you have devised you and your fathers,–without authority from Allah?)

This sentence seems to be interrogative at the first reading, but it is a negative sentence when read in a certain intonation.

Ayub (1965, cited in Essa: 1985) in his thesis about Arabic negation states that negation is carried out not only by a written negative particle but also by a listened particle which is the intonation. So, he considers intonation as a particle of negation because it plays an important role in changing the state of a sentence from affirmative state to a completely different one, such as negative one without even necessity to use a particle of negation. For example the expression ‘ kataba Aliu-n ‘ may have more than one meaning, it may express the predicate, interrogation, exclamation, or negation, and this depends on the level of the tone that the speaker reads the sentence.

Baso (2006) in his article The Preverbal Negation Particles In Arabic is interested in studying the effect of intonation on negation especially the negative focus. He says that:
"The particle *maa* with flat intonation (−) is usually used to specify a negative meaning in perfect tense and it is also used as an interrogative particle with rising falling rising intonation (−) tone either in perfect or imperfect tense." (Baso, 2006: 171)

Consider the following examples:
- *maa jareba zaid al9aseera*
  = (zaid didn’t drink the juice)
- *maa al9aseera jareba zaid*
  = (which juice did zaid drink)
- *maa yaʃrab ziad*
  = (what does zaid drink)

Awad and Na’ami (2006) in their article studies the role of intonation in determining the meaning of the sentence. They also maintain that there are negated sentences without the necessity of using the negative particle. What indicates the meaning of negation in these sentences is not the negative particle but the intonation. Consider (alzumur: 9):

= (Are those equal, those who know and those who do not know?)

The interrogative particle *hal* doesn’t need an answer because it expresses negation. It means those who know and those who do not are not equal.

5. Research Methods

This study is undertaken with the general aim of demonstrating the relevance and significance of what Mitchell (1975) called a basically inductive approach to the analysis of linguistic meaning. He says "one can never be wholly inductive or exclusively deductive but it is possible at a given time to be more one than the other, and when there is still so much to know of meaning in its formal linguistic aspects around the world, then it seems reasonable to believe that at least for the time being it is desirable to treat texts and part texts on their own merits. This is all that is implied by a "basically inductive" approach, namely that reasonably free, though properly controlled, rein should be allowed to the development and exploitation of contrasts arising out of close observation and textual analysis." (Mitchell, 1975:7)

The inductive approach can be carried out following different methods. One of these methods is contrastive analysis. Johansson (2000) defines contrastive linguistics as the systematic comparison of two or more languages with the aim of describing their similarities and differences. This study examines the semantic scope of the negative ambiguous sentences in English and Arabic. It is a contrastive analysis between these two selected languages. The techniques involved in conducting this study include gathering data from different sources. The views expressed in this study were shared with those of native speakers from the Department of Arabic at Mu'tah University. A good number of examples were taken from grammar books and previous linguistic studies. The researcher has also used the internet to collect data.

In order to show the considerable similarities and differences between the two selected contrasted categories (the scope of English and Arabic negation), the English and Arabic examples which are not contextualized has been analyzed in the fourth chapter in order to contrast and compare these two categories.

Negation in English is achieved by using the word “not” while in standard Arabic there are five main particles used to express sentential negation which are: laa, lam, lan, maa and the negative verb laysa. Benmamoun (2000) in his book The Feature Structure of Functional Categories argues that these particles are governed by the tense of the verb that they negate. Although the particles Laa, lam and lan are followed by imperfect tense, each one of them has a different tense interpretation. Laa refers to the
present time as in 1, lan is used to express negation in the future as in 2 and lam refers to the past as in 3. Consider:

1-لا يدرس
   لَدزض
   = (He doesn’t study)
2-لن يدرس
   لن يدرس
   = (He will not study)
3-لم يدرس
   لم يدرس
   = (He didn’t study)

He states that the negative verb laysa can occur in verbal and nominal sentences to express negation in the present. Consider the following examples:

Laysa Aliun yaʃkulu tuffaḥatan.
   لِس علي يأكل تفاحة
   = (Ali isn’t eating an apple)
Laysa yaʃkulu Aliun tuffaḥatan.
   لِس يأكل علي تفاحة
   = (Ali isn’t eating an apple)

The first sentence is ambiguous because it has more than one meaning. The first is that Ali is not eating an apple, while the second is that it is not Ali who is eating an apple, so that the subject only may be negated or the verb may be negated when the negative particle precedes the subject. In the second sentence the negative particle precedes the verb and here there is only one possible meaning which is Ali isn’t eating an apple. The particle maa occurs in the context of the past, but Moutaouakil (1993, cited in Benmamoun 2000 in his book The Feature Structure of Functional Categories) states that it might occur in the present tense. He gives the examples:

maa γaadara zaidun Ɂalmadiinata
   = (Zaid did not leave the city)
maa ?uSallii
   ما أصلي
   = (I do not pray)

Harrama (cited in Al-Omari 2008 in her thesis Forms and Uses of Negation in Standard Arabic and Colloquial Jordanian Dialects) states that the scope of negation in Arabic might be the whole sentence or part of it. He argues that the negative particle and the part that it negates might be separated from each other by certain lexical items. Consider the following example:

Lam yaøoham Zaid musr9an ?ela Amman.
   لم يذهب زيد سرعًا الى عمان
   = (Zaid didn’t go to Amman hurriedly).

This sentence implies that 'he went to Amman but not hurriedly'. Wright (1974) in his book a Grammar of the Arabic Language argues that if only a part of a sentence is to be strongly negated, it must follow the negative particle immediately. With respect to this matter, Baso (2006) discusses the scope of the particle maa, in that it is restricted to the part immediately following it when the perfect tense follows it. Consider the following example:

maa zaid qaraɁa lkitab
   ما زيّد قرأ الكتاب
   = (Zaid didn’t read the book)
In this sentence what is negated is not the verb but it is the focused element which is Zaid. It means that ‘it isn’t Zaid who read the book but someone else’. The particle maa becomes an interrogative marker in imperfect tense if only an object immediately follows it. Consider the following example:

maa kita:ban yaqraɁu zaid
= (which book is Zaid reading?)

Moutaouakil (1993, cited in Benmamoun 2000) argues that laa, unlike lam and lan, can occur in constituent negation which doesn’t negate the whole sentence but only one part. Consider the following example:

laa raʤula fiddari
= (There is no man in the house)

Albakari (1984) has written about the styles of negation in the Qur’an. He divided Arabic negation in his study into plain negation and tacit negation as the two main parts of his study. He says: “plain negation implies denial in the present, past and the future tenses, expressed through certain literal instruments classified according to the tense of negation” (Albakari,1984:1). He illustrated plain negation by dividing it into three components and distributing the particles of negation according to the tense of negation; negation in the present includes the particles ( laa, laysa, maa, ?inna, and layta ), negation in the past includes the particles ( lam and lamma ) and negation in the future includes the particle ( lan ). "Tacit negation is expressed through literal ratification, improbability, exception, exclusion, aloofness, exaltation and other rhetorical expressions implying denied interrogation" (Albakari,1984: 2). He argues that this kind of negation may be achieved without the necessity to use negative particles to form negative statements. Consider the following example:

law Darabani Ahmad la Darabtuhu. ( tacit negation )
= ( if Ahmad hit me, I would hit him )

In this sentence, tacit negation is understood from the context without using a negative particle. It means that I would hit him, if he hit me, but he didn’t hit me. Babteen (2004) studies many particles that might indicate the meaning of negation without using negation particle such as law (ىى), hal (هو) and Ɂilla (لا). The examples of such particles are discussed in Chapter Four. Essa (1985) states that a negated sentence might indicate affirmative proposition and affirmative sentence might express negative proposition especially when an exceptive particle is used. Consider these examples:

dʒalasa alɁawlaadu Ɂilla Zaid
= (All the boys sat but Zaid didn’t)

maa ʤalasa alɁawlaadu Ɂilla Zaid
= (All the boys didn’t sit but Zaid did)

Although the first sentence is affirmative, it indicates that Zaid didn’t sit. While the second sentence indicates that Zaid did sit although it is negated. Al-SamirraɁi (2000) in his book The Arabic Sentence and The Meaning states that the negative particle might be used to express other functions. Consider the following example (alɁḥza: 23):

ممن المؤمنين رجال صدوا ما غاهوا الله
= (Among the Believers are men who have been true to their Covenant with Allah).

Maa in this sentence is a relative pronoun. He states that the negative particles might induce ambiguity. He gives the following example (Al-SamirraɁi,2000:16):

ما ɁaaaɁaniɁ Ɂaxuka raakiban
= (I didn’t find my brother)
This sentence has a narrow scope in that the negative particle negates only the adverb raakib-an at the first reading. It might mean that your brother didn’t come at all; it has a wide scope at the second reading.

6. Findings and Discussions
Lyons (1977: 452) state that “modality refers to the speaker’s opinions and attitudes toward the proposition that the sentence expresses or the situation that the proposition describes”. The semantic features here related to the word modality reflect various senses of the modal verbs such as possibility, necessity, permission, obligation, volition, etc. Palmer (1979) states that there is a difficulty in the interpretation of the negated epistemic and deontic verbs of possibility and necessity (can, may, must and need). The interrelation between modality and negation might induce two problems. First, the way we interpret the negated modal auxiliary, and secondly that there is no formal way to define whether it is the main verb or the modal that is negated. This is what is called the negation of modality and proposition. So, it should be argued that the component of ‘modality’ and ‘proposition’ must be taken into consideration to outline the scope of ambiguity that might arise in relation of the modal verbs with negation. Many researchers argue that the modal verbs behave in an irregular way when they are negated. It is not necessary that the same modal of the sentence may be used to negate that sentence. In other words deontic necessity and its negation are expressed by the same modal whereas epistemic necessity and its negation are expressed by different modals. Consider the following examples:

1.a. You must write your homework today. (obligation)
1.b. You mustn’t write your homework today. (prohibition)
2.a. He must be at home. (epistemic necessity)
2.b. He can’t be at home. (impossibility)

In 1.a and 1.b, must as a deontic modal is used in both affirmative and negated sentences, while must as epistemic modal in 2.a is only used in affirmative sentences and the appropriate negative form of epistemic must is can’t in 2.b. Coats (1983) states that can’t is used because mustn’t is unavailable while Palmer (1990) argues that mustn’t isn’t used to negate epistemic must because can’t is supplied. Radden and Dirven (2007: 259) state that “the most intriguing problem in the interaction of modals and negation is the scope of negation”. It will be easier to consider the notion of negation if we distinguish between the terms of modality and proposition. Many linguists differentiate between these notions and set them apart, Halliday (1976), Lyons (1977), Palmer (1979), Coats (1983), Radden (2007) and others.

Modality of a sentence refers to the meanings expressed by the modal verbs, while proposition refers to what is expressed by all that follows including the main verb Palmer (1987). Furthermore, proposition is expressed by the predicate of the sentence. When the proposition is negated this means that the negation scope extends over the main verb while when the modality is negated, the negation scope extends over the auxiliary. It is essential to note that the particle not doesn’t reveal which one of them is negated. The scope of negation can be determined only in the paraphrasing of the statements. The semantic and formal criteria are involved here. The latter criteria is marked by the form of negation –n’t which occur only with auxiliary verbs, i.e. formally it is the modal that is negated at the following sentences, while the former criteria is concerned with the interpretation of the negated modal, i.e. semantically what is negated either the proposition or the modality. Consider the following sentences:

You mustn’t watch this film.
You can’t watch this film.

The first sentence can be paraphrased as ‘it is necessary for you not to watch this film,’ i.e. the proposition is negated, while the second sentence can be paraphrased as ‘it is not possible that you watch the film,’ i.e. the modality is negated here. Radden (2007) states that epistemic and deontic modality have both sides in relation to negation. The first one which includes subjective modals that are used to negate the proposition and the second one includes external modals that are used to negate the modality. Palmer
(1990: 5) says "Epistemic modality refers to the speaker’s judgment about the truth of the proposition what he is talking about, he is presenting, and i.e. it denotes the possibility of a given proposition’s being or becoming true". Epistemic modality is subjective, i.e. it contains the speaker’s opinions and attitudes involved. Lyons (1977) argues that epistemic modality is concerned with the speaker’s knowledge, belief, or opinions rather than facts. The word possibility can be considered the most appropriate word that expresses the meaning of the epistemic modality. There are three main degrees of the meaning of epistemic modality: possibility, necessity, and epistemic will ‘probability’. Ambiguity rises from the interrelation of negation and the epistemic verbs of possibility and necessity (may and must). In other words, the negation of epistemic modality can be divided into two distinct ways. The first one is the negation of the proposition which Quirk (1985) has called negation of the main verb and the second one is the negation of modality that is called by Quirk negation of the auxiliary. The first degree of epistemic modality which is possibility is expressed by the modal may and the appropriate paraphrase is ‘possible that’. Consider the following example:

He may be at his office. (it is possible that he is at his office)

1- He may not be at his office.
2- He can’t be at his office.

Sentence 1 indicates ‘it is possible that he is not at his office’, so it negates the possibility while the modality is affirmative. Sentence 2 negates the modality like this: ‘it is not possible that he is at his office’, the proposition is affirmative and the possibility is negated. May not as can be gleaned has a narrow scope of negation while can’t has a wide scope of negation. The second degree of epistemic modality is necessity that is expressed by the modal must and the best paraphrase is ‘the only possible conclusion is that.....’ because the speaker talks about a conclusion that is already known or observed depending on past experience or circumstantial evidence. The following example denotes epistemic ‘logical’ necessity in that the appearance of the man is observed by the speaker so he must be older.

He must be older than me. (The only possible conclusion is that he is older than me).

The negation of epistemic must is not:

* He mustn’t be older than me.

It is obvious from last sentence that mustn’t is not considered an appropriate negative form to express the epistemic situation of must, which depends on our observation and conclusion of the events, because there are no epistemic necessity modals that are used for the negation of modality or proposition. For example, the positive conclusion can be made when the appearance of the person seems to be older by the expressions of his face, we will conclude that he seems older. Negative conclusion i.e. that something is not the case, is derived from negative evidence or lack of knowledge. So, when the expressions of the person’s face indicate that he is younger than me, we may conclude that he is not older. Radden (2007) states that the lack of evidence here doesn’t lead to the only possible conclusion. So, mustn’t is inappropriate here. The last discussion can be considered as an answer of questioning why mustn’t is not a suitable form to negate epistemic must. Palmer (1987) states that there is a gap here and that gap can be filled in relation to the so-called logical equivalences as the following:

Not possible = Necessary not
Possible not = Not necessary

This means that the paraphrase it is not possible that.... is identical with it is necessary not and it is possible not is identical with it is not necessary. If, for example, it is not possible to do something, it is necessary not to do it, and vice versa. So, here can not and may not can be provided to fill that gap in the negation of epistemic must depending on the logical equivalences. In other words, negated possibility is logically equivalent to affirmative necessity that something is not the case and negated necessity is equivalent to affirmative possibility that something is the case. So, epistemic necessity is negated as the
negation of epistemic possibility. Consider the negation of epistemic must in the example He must be older than me:

1-He can’t be older than me.
2-He may not be older than me.

Sentence 1 means that 'the only possible conclusion is that he is not older than me'. Depending on the logical equivalence it can be explained as: it is not possible that he is older than me. Palmer (1987) argues that can’t is used here, in the reversed order, to negate the proposition. A further explanation provided by Radden (2007) states that 'it is necessarily the case that he is not older than me'. Sentence 2 indicates 'it is possible that he is not older than me' which is equivalent to Radden’s paraphrase ‘it is not necessarily the case that he is older than me’. It is the modality that is negated in this sentence. Negation affects both modality and proposition when epistemic must and may are negated by the same negated modals but in different ways. In other words, when epistemic may is negated by may not what is negated is the proposition whereas when epistemic must is negated by may not what is affected is the modality. In other words, when epistemic may is negated by can’t it affects the modality while the proposition is affected when the same negated modal can’t is used to negate epistemic must. The difference between epistemic may and must is illustrated in the following table. Consider:

(1): Negation of Epistemic May

<table>
<thead>
<tr>
<th>Degree of modality</th>
<th>affirmative</th>
<th>Negated modal</th>
<th>Modality and proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epistemic possibility</td>
<td>may</td>
<td>may not</td>
<td>Proposition Possible-not</td>
</tr>
<tr>
<td>can’t</td>
<td>Modality</td>
<td>Not possible</td>
<td></td>
</tr>
</tbody>
</table>

Table (2): Negation of Epistemic Must

<table>
<thead>
<tr>
<th>Degree of modality</th>
<th>affirmative</th>
<th>Negated modal</th>
<th>Modality and proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epistemic necessity</td>
<td>must</td>
<td>may not</td>
<td>Modality not-necessary</td>
</tr>
<tr>
<td>can’t</td>
<td>proposition</td>
<td>necessary-not</td>
<td></td>
</tr>
</tbody>
</table>

Logical necessity, also, can be expressed by the modal will, consider the following examples:

1-He will be at the university. Yes, his book isn’t here, so he must be there.
2-He must be at the university.

Actually, there is no difference between 1 and 2, because both of them express logical necessity. Now consider the negation of 1:

He won’t be at the university.

Won’t in the previous example can be paraphrased as ‘it is reasonable to conclude that he is not at the university’. It negates the proposition. There is a third degree of the epistemic modality that is expressed by will, would, should and ought to which is ‘probability’ in that all these verbs refer to what is reasonable to expect. Consider the following examples:

He will be at the university.
He would be your brother.
Ali should / ought to be at his office.

Epistemic modals of probability will, would, should and ought to can be negated as in the following: "He will not be at the university. (it is reasonable to conclude that he is not at the university)." He would not be your brother. (it is probable that he is not your brother)
Ali shouldn’t / ought not to be at his office. (it is probable that he is not at his office)

All the negated modals here, as the paraphrases indicate, negate the proposition not the modality. It is essential to mention that the modal couldn’t negates the modality when it is used epistemic ally.

He couldn’t / can’t be hungry

This sentence negates the possibility and the speaker believes that something is impossible to happen. On the other hand Arab researchers have studied the concept of modality according to several categories such as semantic and grammatical criteria. El-Hassan (1990) argues that modality in Arabic is related to semantic or lexical category rather than grammatical one. The elements that are used to indicate modality and translate the English modality into Arabic are studied as single elements in various grammar books of Arabic in that they have grammatical properties which are exclusive to them. There are many expressions, in Arabic, equivalent to the English modals in all kinds of modality, i.e. epistemic, deontic and dynamic modality, but these equivalents don’t convey the exact meaning. In other words, it is difficult to find an Arabic counterpart, i.e. semantically and grammatically, to the English modal because Arabic has a number of synonymous items and expressions that are used to convey the meaning of a single English modal auxiliary and doesn’t have a distinct class of modal verbs with clear cut distinctions. The following discussion mainly illustrates the degrees of epistemic modality in Arabic with relation to negation in an attempt to answer an important question whether negation in Arabic, as in English, affects the modality or proposition. Arabic, like English, is a language that expresses the attitudes and opinions of the speaker, i.e. that is related to the epistemic modality, by many verbs yaDunn ‘believe’, particles rubbamaa ‘it is possible’ and expressions mina lmuhtamal ‘it is assumed’. The most frequent particles and expressions that are used to translate epistemic modality are rubbamaa, qad, mina lmuhtamali, yuhtamalu, mina lmumkini, yumkinu, which are mainly used to indicate the meaning of epistemic possibility. Consider the following example:

1. mina lmumkin annahu fi maktabihi.
   = (it is possible that he is at his office)

mina lmumkin at the sentence 1 above is used to translate epistemic may in the English sentence He may be at his office. In order to perceive the scope of negation difference between Arabic modal mina lmumkin and English modal may, it is essential to refer to the negation of the English sentence He may be at his office that is negated by may not which negates the proposition, and can’t which negates the modality. Sentence 1 is negated as the following:

2. laysa mina lmumkin annahu fi maktabihi.
   = (it isn’t possible that he is at his office)

Sentences 2 and 3 illustrate a strong connection between the components of modality, i.e. here epistemic possibility, and negation. The former negates the proposition, i.e. laysa fi maktabihi, and the modality, i.e. mina lmumkin, is affirmative while the latter expresses the negation of modality, i.e. laysa mina lmumkin, where the proposition is positive, i.e. annahu fi maktabihi. We can say that He may not be at his office where the proposition is negated epistemically is equivalent to 2 and He can’t be at his office where the modality is negated is equivalent to 3. Whereas in Arabic we use the same epistemic modal mina lmumkin to negate both modality and proposition, it is essential in English to change the epistemic may to negate the modality. Although all the elements that are mentioned above are appropriate to translate the sentence He may be at his office, El-Hassan (1990) states that rubbamaa is the most appropriate item used to translate epistemic may. Consider the following examples:

3. laysa mina lmumkin ?annahu fi maktabihi.
   = (it isn’t possible that he is at his office)

4. rubbamaa ?annahu fi maktabihi.
it is possible that he is at his office (it is possible that he is at his office)

5- rubbamaa yakunu (hua) fi maktabihi.

= (it is possible that he is at his office)

rubbamaa at 4 and 5 indicates the same sense, but it differs in its structure. The latter is followed by a verbal sentence, i.e. yakun fi maktabihi, while the former is followed by a nominal sentence, i.e. annahu fi maktabihi. Now consider the negation of rubbamaa in the following sentences:

6- rubbamaa ?annahu laysa fi maktabihi.

7- rubbamaa laa yakunu fi maktabihi.

8- * laysa rubbamaa ?annahu fi maktabihi.

Although, the structure of 6 and 7 is different, i.e the former is a verbal sentence negated by laysa and the latter is a nominal sentence negated by laa, the proposition is negated in both sentences. Sentence 8 is considered wrong because rubbamaa cannot be preceded by the negative particle laysa. We can say that sentence 6 is the most appropriate equivalent to He may be not at his office. This suggests the idea that rubbamaa is the nearest modal to epistemic may. As mentioned before, epistemic necessity is concerned with the judgement of the speaker towards what he says. It is, in English, mainly paraphrased as (the only possible conclusion) and expressed by the modal must. The expressions laa budda, laa rayba, laa jakka are used to indicate epistemic necessity and translate the English sentence He must be at his office. Consider following examples:

9- laa budda ?annahu fi maktabihi.

10- laa jakka ?annahu fi maktabihi.

11- laa rayba ?annahu fi maktabihi.

The last examples have the same sense in that they might be paraphrased as ‘the only possible conclusion is that he is at his office, i.e. for example because the lights of his office are on. The appropriate negative expression used to negate 9, 10 and 11 is laa yumkinu. Consider the following example:

12- laa yumkinu ?an yakuna fi maktabihi.

= (it is not possible that he is at his office)

This sentence is equivalent to the English sentence He can’t be at his office in which the modality is negated. It was mentioned before that ‘not possible’ is the logical equivalent to ‘necessary not’ which is expressed by Palmer (1979) as ‘the only possible conclusion is that he is not at his office’ and by Quirk et al (1985) as ‘I am certain that he is not at his office’. Al-Masarwa (2000) suggests that the probability in Arabic is expressed by γlabu DDanni which is equivalent to epistemic will in He will be at the university and mina lmurajjahi equivalent to should/ ought to and would in He should / ought to be at his office and He would be your brother. Consider the following examples:

13- γlabu DDanni ?annahu fi lʤami9a

= it is probable that he is at the university

14- mina lmuradγahi ?annahu fi maktabihi

= it is probable that he is at his office

15- mina lmuradγahi ?annahu ?axuka

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It was mentioned before that the modals (will, should, ought to, would + not) negate only the proposition. It seems that the negated ?γlabu DĐanni is the nearest equivalent to these negated modals because it is almost used to negate the proposition; as in 16 whereas mina lmurajjahi is used to negate both proposition and modality as in 17 and 18:

16- γlabu DĐanni ?annaḥu laysa fi lʤami9a.
أَلْضُنَّ اللَنَحَن يَسِ في الامْبَّاَمَا

17-mina lmuradjahi ?annaḥu laysa fi maktabihi
من المرحَج أنَّه ليس في مكتبة

18-laysa mina lmurdjahi ?annaḥu fi maktabihi
لَيْس من المرحَج أنَّه في مكتبة

To conclude, the modal ?γlabu DĐanni is the appropriate equivalent to the epistemic modals will, would, should and ought to in their affirmative and negated form.

In the previous part some syntactic features of the negated modal auxiliaries and their semantic interpretations have been presented. These modals, it was argued, may in certain cases fall inside the scope of negation and in others fall outside the scope of negation. This part is also concerned with the scope of negation of other grammatical aspects such as quantifiers, adverbial phrases, subordinate clauses and prepositional phrases. It is essentially concerned with the negation of these aspects using intonation as a grammatical particle to determine their negative scope. Intonation is one of many aspects of the language that provides distinct meaningful functions. In this part the researcher attempts to identify the relation between negation and intonation by discussing the grammatical function that intonation, especially the falling and fall-rise contours, can play in the interpretation of negative phrases in English and Arabic.

Halliday (1970) states that the falling tone means certainty, while the fall-rise seems to be close to uncertainty. He says about the fall-rise tone “characteristically it is used to make statements carrying some reservation, implying a ‘but’, and also to express conditions” (Halliday,1970:23). This means that the falling tone expresses finality and completeness and the falling-rising tone expresses contrastive meanings. The nucleus fall is the neutral tone which is the most common in speech. It is always included in the scope of negation in contrast to the fall-rise which doesn’t have the direct meaning, rather it limits the scope of negation. Consider the following example:

No smoking section available

This sentence with a falling tone on the word ‘section’ could mean “There is no section available for smokers”, while with a falling rising tone on the same word it might mean that “There is a no smoking section which is available for smokers. Lasnik (cited in Bing,1980) states that there is a strong relationship between the scope of negation and the scope of quantifier arguing that special tones limit the scope of quantifier negation. He gives the following generalizations (Bing,1980: 203):

- In general, a quantifier following not, but not immediately, can be non-negated if the sentence has a special intonation contour.
- A quantifier, immediately following not is obligatory negated, and consequently the NP it quantifies can never be referential.

Ladd (cited in Bing,1980: 203) gives the following examples:

.a. I couldn’t solve many of the problems.1
.b. Not many of the problems were solved

Based on the Lasnik’s first generalization, sentence 1.a has two interpretations depending on the different tones while based on the second generalization sentence 1.b is obvious in that it has only one meaning.

The two meanings of 1.a are illustrated at 2.a and 2.b by using different intonation
2.a. I couldn’t solve many of the problems.
2.b. I couldn’t solve many of the problems.

Sentence 2.a with falling tone on ‘many’ means that ‘not many of the problem were solved’ while sentence 2.b indicates that “Although many of the problems couldn’t be solved, some of them (perhaps as many as half) were solved” (Bing, 1980: 203). Bing suggests that ‘many’ in sentence 2.b could be explained by another quantifier which is ‘some’ as “I could solve some of the problems” (Bing, 1980: 203). In other words, we can say that the relation between negation and quantifiers might induce ambiguity and intonation plays a crucial role in eliminating this ambiguity. El-Rashdan (forthcoming) asserts that intonation plays an important role in determining the scope of negation in negative adverbial clauses. He gives the following example:

3.a. I didn’t kill the bird deliberately.
3.b. I didn’t kill the bird deliberately.

The last two examples differ in meaning. 3.a with a falling tone indicates that ‘the bird wasn’t killed and I didn’t kill it by design because I wanted that’, whereas sentence 3.b with a fall-rise tone indicates that ‘the bird was killed but not deliberately; I didn’t want that’. We can say that the adverb ‘deliberately’ falls within the scope of negation in 3.a while in 3.b it does not. Intonation is universal not only because every language has an intonation system but also because the functions of intonation seems to be shared by many different languages. In Arabic, as in English, the falling tone expresses finality and completeness and the falling-rising tone expresses contrastive meanings. The starting point here is to talk about the ambiguity of the negated Arabic sentences. Many researchers assert that there is an ambiguity in the negated sentence in Arabic. Al-SamirraɁi (2000) divides Arabic sentences semantically into decisive and presumptive sentences. The former is related to sentences that have only one direct meaning while the latter is related to sentences that might have more than one meaning. So, we can say that the second kind of sentences express the meaning of ambiguity. Two aspects of ambiguity are related here. The first one is to use the negative particle not for negation but for other functions, such as the following example:

.a. maa laka xayr.1 
) There is no good feel for you(=
ما لك خير

.b. maa laka xayr.1 
) what you have is a good feel(=
ما لك خير

Sentence 1.a with a fall tone on the word ‘xayr’ means that ‘you don’t have a good feel’, so maa is used as a negation particle. Whereas sentence 1.b indicates that maa with a fall-rise tone is a relative pronoun, it means that ‘what you have is a good feel. So the negative particles might be perceived in more than one meaning if they are not contextualized. Consider the following sentence:

.laal waldun fi lbayt.2 
) There isn’t a boy at home(=
لا ولد في البيت

Sentence 2 with a falling tone negates the presence of the boys at all like ‘there is no one at home’, while with a fall-rise tone negates the number of boys as ‘there might be more than one boy not just one.’ El-Rashdan (forthcoming) gives the following sentence:

.3.ʔna lam ʔsf9al ʔdaalika liʔadglika.
)
I didn’t do that for your sake(=
أنا لم أفعل ذلك لاجلك

With a fall on sake ‘liʔadglika’, sentence 27 means ‘it was for your sake that I didn’t do that’. A fall-rise on the same word ‘liʔadglika’ changes the scope of negation to mean ‘I did that but not for your sake’ (it was for another reason).
Now consider sentence 28 which is equivalent to the English sentence He will not buy the home because it is big.

lan yaʃtari lbayta liʔannahu kabiir.

This sentence with a falling tone on kabiir means ‘He will not buy the home and the reason is because the home is big’, while the second meaning is expressed by a fall-rise tone on the same word to indicate ‘He will buy the home, but not because it is big’. Negative adverbial clauses in Arabic are also affected by intonation. Consider:

5. laa yasɁal ennasa Ɂilħaħan.

Sentence 5 is ambiguous. It might mean ‘he didn’t ask the people neither with importunity nor without importunity’, if there is a falling tone on the word Ɂilħaħa-n. With a fall-rise tone on the word Ɂilħaħa-n, it means ‘he asks people but not importunately’.

7. Conclusion

1. The findings show that there are considerable number of similarities and differences of the scope of negation in English and Arabic. In terms of the formal properties, it is necessary in English that the negative particle follows the modals as can’t but not * not can, by contrast, in Arabic the negative particle precedes and follows the modal as yastaTii9 ?an laa and laa yastati9 ?an. Negation of modality in Arabic, like English, affects both modality and proposition but there is a difference in that negation of proposition and modality in Arabic depends on the position of the negative particle whether before or after the modal element. In other words, if the negative particle is before the modal this means that the modal is negated and the main verb is positive and if it is after the modal this negates the main verb, proposition, and the modal is positive. In English although the position of the negative particle is always after the modal, negation may affect the proposition or the modality. With respect to intonation, the study concludes that the semantic influence of intonation variation, especially the falling and fall-rise contours, in determining the scope of negation in English and Arabic are the same in that the falling tone indicates the literal meaning of negation while the falling rising tone indicates the meaning of contrast.

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