ABSTRACT

SCOPAL RELATIONSHIP OF NEGATION AND QUANTIFIERS IN JIZANI ARABIC

This study aims at investigating the scope interpretation of quantified DPs, especially when they interact with negation in Jizani Arabic. The main purpose of the study is to investigate the ambiguous relationship between negation and quantifiers under the Logical Form rules. Ambiguity in a sentence is a result of having different semantic interpretations of that sentence. In this thesis, I investigate scope relations by using Negation Placement Strategy. Negation Placement Strategy is introduced by De Haan (1997 & 2006) to examine the interpretation of wide and narrow scope of negation in a sentence. I show that different interpretations can be identified by examining various sentences in Jizani Arabic. Ambiguity can be found when there are two quantifier operators or by changing the surface syntactic position of negation in a Quantifier Phrase (QP). This operation is supported by different kinds of evidence based on the interaction between the quantifier operator and other kinds of operators, such as negation. The investigation results indicate that there is an absence of ambiguity in Jizani Arabic when the quantifier *kull* '*all'* is in the same sentence with the negations *ma* or *mu*. However, when the quantifier *kull* '*every'* interacts with negative particles, a sentence shows scope ambiguity in its interpretation. A solution has been proposed to avoid this ambiguity. The best resolution of scope ambiguity in JA is allowing the QP to take a wide scope over the negation in spite of the quantifier's position.

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SCOPAL RELATIONSHIP OF NEGATION AND QUANTIFIERS IN JIZANI ARABIC

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CHAPTER 1: INTRODUCTION

This research has a particular importance to the syntax-semantic interface. The aim of this study is to understand how quantifiers and negation function and alter meaning in the sentences of Jizani Arabic.

Jizani Arabic belongs to the Yemeni branch of Arabic and has approximately 15 million native speakers. It is spoken in the southern region of Saudi Arabia and is closely related to Standard Arabic. However, Jizani Arabic differs from Standard Arabic with regards to several syntactical features. The syntactic distinction between sentential negation in past and present tense contexts differs between Standard Arabic (SA) and Jizani Arabic (JA). In Jizani Arabic, for example, present and past tense verb forms are typically negated with *ma* as the verbal negation pattern and *mu* as the nominal negation pattern. While in Standard Arabic, present tense forms are negated either via *lan* as the verbal negation pattern or with the independent negation marker *laysa* in nominal negation pattern.

The main purpose of this thesis is to show that the scope relation between negation and quantifiers in JA allows for two possibilities; ambiguous and unambiguous interpretations. In this thesis, this relationship is investigated using De Haan's (1997 & 2006) Negation Placement Strategy, which shows how the negation position affects a sentence's logical form. When an interaction between negation and the quantifier *kull* '*all'* occurs in a sentence, there is no ambiguity. Whereas, in JA when there is interaction between negation and the quantifier *kull* *'every'* there is ambiguity and two possible semantic interpretations exist. This interaction causes a scope ambiguity in the sentence. I show that this problem can be explained by using Structural Preference Principle to avoid the scope ambiguity (Kurtzman & MacDonald, 1993).

I will discuss two basic issues related to the relation of scope ambiguity that have been discussed in the literature. The first issue is the scope ambiguity of sentential negation with the quantifier *kull 'every'* in SA and JA. In this thesis, I show why there is ambiguity in these kinds of sentences in JA while there is an absence of ambiguity in SA. In chapter 6, I discuss this problem in JA and I provide an analysis, which explains how this ambiguity in interpretation occurs. The second issue is the structural location of the negative *ma* in both SA and Saudi Dialects, specifically JA. I provide two arguments to support that issue. Since these arguments are related to the word order, I provide a brief explanation about scope relation in VSO and VOS word orders in chapter 6.

This thesis is structured as follows. Chapter 2 lays out the historical background and presents some information about the quantifiers and negation in Arabic. In chapter 3, I provide a discussion of the differences in scope ambiguity between SA and JA with regards to the possible interpretations that are caused by the quantifier *kull 'every'*, and the negative particles *ma* and *mu*. Chapter 4 discusses Benmamoun's (2000) and Al-Tamari's (2001) arguments about the location of *ma* in the syntactic structure of SA and other Saudi Dialects. As an introduction to chapter 7, I discuss in chapter 5 the scope of quantifiers in JA and their effects on the interpretation of the sentence. In addition, I illustrate in chapter 6 the scope of negation in JA. Chapter 7 is divided into three sections. In the first section, I examine how the scope of negation and the scope of quantifiers interact with each other in a sentence and how different interpretations are introduced following De Haan's (1997, 2006) strategy (NPS). I then investigate how the scope of quantifiers is interpreted differently in VSO and VOS sentences. In the second section, I examine scope ambiguity problems in JA between negation and quantifiers. In the third section, I provide a solution to resolve the problems of

scope ambiguity in JA. In chapter 8, I provide a brief conclusion by summarizing the scopal relations between negation and quantifiers in JA, as well as a discussion regarding the finding of the scope ambiguity resolution.

CHAPTER 2: HISTORICAL BACKGROUND

2.1 Quantifiers

Quantifiers are terms that explain quantificational connections between sets, where sets are uttered as predicates (Hallman, 2009, p. 1). Hallman stated that quantifiers in Arabic typically agree with their associating nouns. This is what is signified by the fact that quantifiers ordinarily come as the first term of a construct condition and incur morphological case marking as well as nouns. In addition, Arabic quantifiers are able to host clitic pronouns or definite articles as shown in the following examples (Alghamdi, 2012, p. 6)

1) *Kulla-**hum** ʒamilat*
   All- them beautiful-FEM
   'All of them are beautiful'
2) ***Al**-kull namu:*
   The-all sleep-PAST-PL
   'Everyone slept'

According to syntactic and morphological criteria, Hallman (2009) recognized three classes of quantifiers; nominal, numeral, and phrasal. However, in this thesis, I will discuss only some of the nominal quantifiers and postpone the others for further future research.

3) *All Muslims love Makkah*.

The quantifier *kull 'all'* in example (3) shows a relation between *Muslims* (a noun phrase or DP indicating the set of Muslims) and *love Makkah* (a predicate

VP indicating the set of individuals who *love Makkah*). Words like *every* and *all* are called *universal quantifiers*, which are represented by the symbol ∀**.** Universal quantifiers are logic symbols that allow us to represent sentences that are within the scope of quantifiers and are valid for everything. Words like *some* are *existential quantifiers* and they are represented by the symbol ∃**.** Existential quantifiers are logic symbols that allow us to represent sentences that are within the scope of quantifiers and are valid for at least one instance of something.

2.2 Negation

"Negation is a universal phenomenon that is common to all languages of the world" (Aljumaily, n.d.). Moreover, negation is a significant syntactic aspect that exists in everyday communication in all languages. To give declaratives utterances a negative reading, Arabic contains a specific set of negating constructions.

In Arabic, negation is primarily achieved by placing certain particles before the element that is to be negated. These particles have to agree with the verb tense; past, present, and future, as shown in (4). There are different variable negative markers that are used to form a negative statement; each one has its specific use and condition. For example, *lam*, *lan*, *ma*, and *laa* can negate verbs in a verb initial sentence; those predicates which are formed with verbs. The invariant particles *ma* and *laa* occur in the future tense before perfective, imperfective and before nouns. *Lam* occurs before imperfective only in the past tense. *Lan* occurs in the future tense before imperfective only. Additionally, *laysa* is a negative verb, which occurs with present tense and is only marked for subject agreement.

4)

/lan/ - It is used with subjunctive imperfect to indicate negation in the future.

a) ex: *lan jaktoba l-aʔaʊlado l-gasˤidah*
not write the boys the poem
"The boys will not write the poem."

/laa/ - It is used with the indicative imperfect to express negation in the present or future.

b) ex: *laa ʔrɪf ʔaɪn l-makan*
not know where the place
"I don't know where is the place."

/maa/ - It is used with the imperfect to negate the present.

c) ex: *maa ʔrɪf feɪn l-makan*
not know where the place
"I don't know where is the place."

According to Alsharif (2014), a basic difference between *laysa* and *lam*, *laa*, and *lan* is that *laa*, *lam* and *lan* share the same properties and features. The negatives *laa*, *lam* and *lan* are required to be verb adjacent when their verbal element is the main predicate. This can be juxtaposed by *laysa*, which is not required to be adjacent to the verb because it is sensitive to the subject agreement.

Furthermore, *laysa* is distinct from other verbal negations because *laysa* and the following verb can be separated by the subject.

2.3 Previous Studies

According to Kurtzman and MacDonald (1993), different theorists have proposed that the English syntactic construction prefers scope ordering while being placed in quantified phrases (QDPs). Changing the quantifier's position in the sentence gives an ambiguity between several different semantic readings, which can be represented with different logical forms. This ambiguity is focused on the position of the quantifier and what constituents it has scope over. Ambiguity can occur when a sentence involves more than one QDP, and the quantifier is in [SPEC, DP]. For example, the meaning of the sentence in (5) may parallel either of the logical structures as shown in (6) and (7):

5) Every child painted a tree.

6) $(\forall \boldsymbol{x})(\exists y)$ ($\boldsymbol{x}$ is a child & y is a tree & $\boldsymbol{x}$ painted y)
[read as: "For every child $\boldsymbol{x}$, there is a tree y, such that $\boldsymbol{x}$ painted y"]

7) $(\exists y)\ \forall \boldsymbol{x})$ ($\boldsymbol{x}$ is a child & y is a tree & $\boldsymbol{x}$ painted y)
[read as: "There is a tree y, such that for every child $\boldsymbol{x}$, $\boldsymbol{x}$ painted y"]

Previous research has shown that existential quantifiers can affect the semantic scope in terms of ambiguity because it is more inclusive than the syntactic scope (see Cresti, 1995; Fodor & Sag, 1982; Kratzer, 1995; Reinhart, 1995; Winter, 1995, among many others). In this literature, researchers have

proposed that the syntactic scope of the universal quantifiers can be assigned by the semantics. This means that quantifiers are part of the semantics, but they affect the syntax. Partee, Borschev, Paducheva, Testelets, and Yanovich (2011) argued that the syntactic scope of quantifiers can be assigned by the semantics.

In SA, negation has had a good deal of attention within a Generative framework. Ouhalla (1993) assumed a particular view associated with the hierarchical structure of the functional projections in Arabic. His structure is prominent because it is unlike other structures proposed by Belletti in (1990) for English and Romance languages. Therefore, the hierarchical position of TP and AGRSP may differ within each language (Alsharif, 2014, p. 71). Thus, when Belletti suggested that AGRSP in English and Romance languages is higher than TP, Ouhalla proposes the opposite in Arabic; AgrSP is lower than TP. The following hierarchy in Arabic shows that NEGP is located between TP and AGRSP, which means NEG raises to T and becomes adjacent with it.

8) (TP (NEGP (AGRSP))) (Ouhalla, 1993)

CHAPTER 3: SCOPE AMBIGUITY

When a sentence includes two quantifiers or operators, there is a possibility for scope ambiguity (Horn, 1989; Jackendoff, 1972; May, 1977, among others). To show this, consider how a universal quantifier in sentential negation is influenced once it moves to a subject position ([SPEC, TP]) in JA as shown in (9) and Figure 1.

9) *Kull dʒahel ma ʔakal bitza*
every child not eat pizza
a) ∀x [dʒahel (x) → ¬ ʔakal bitza (x)] (= none of the child ate)
b) ¬∀x [dʒahel (x) → ʔakal bitza (x)] (- not every child ate)
'Every child did not eat pizza'

According to the interpretation in (9 a), when the quantifier phrase (QP) is interpreted outside the scope of negation (every > not), the sentence is read as *every child is such that s/he didn't eat pizza.* Whereas, in the second reading as shown in (9 b), the quantifier phrase (QP) is interpreted inside the scope of negation (not > every), and the sentence is read as *not every child ate pizza* as diagramed in Figure 1.

According to Lee (2009), the interpretation of (9 a) is termed as a 'surface scope' or an 'isomorphic' interpretation of (9) because the scope interpretation of *every* and *not* agrees with their surface syntactic position. However, the sentence in (9 b) is interpreted in the reverse order as an 'inverse scope' or 'a non-isomorphic' interpretation of (9) (Lee 2009, p. 6).

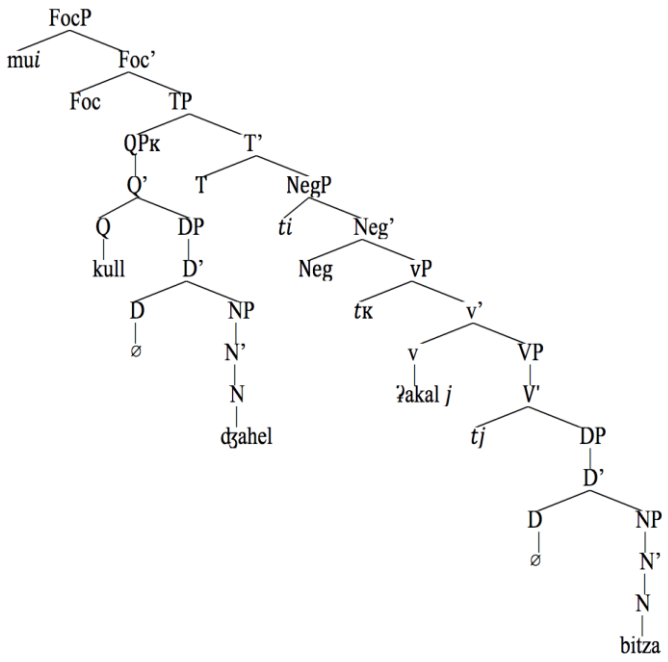

Figure 1. An ambiguity in JA

In the same sentence in SA, we find that there is no ambiguity, and the sentence holds only one interpretation (see Figure 2).

10) *Kull tˤeɪfəl lam jaʔkul bitza*

Every child not eat pizza

a) ∀x [tˤeɪfəl (x) → ¬ jaʔkul pitza (x)] (= none of the child ate)

'Every child did not eat pizza'

According to the interpretation in (10), when the quantifier phrase (QP) is interpreted outside the scope of negation (every > not), the sentence is read as *every child is such that s/he didn't eat pizza* as shown in Figure 2.

The reason for the difference in scope ambiguity between SA and JA is that the words' string can be expressed by more than one syntactic structure and each of these interpretations is related to a different phrase structure as shown in

Figures 1 and 2. A sentence may have an ambiguous interpretation when the structure of the sentence is unclear. This is the case in JA but not SA, which has only one possible reading.[1]

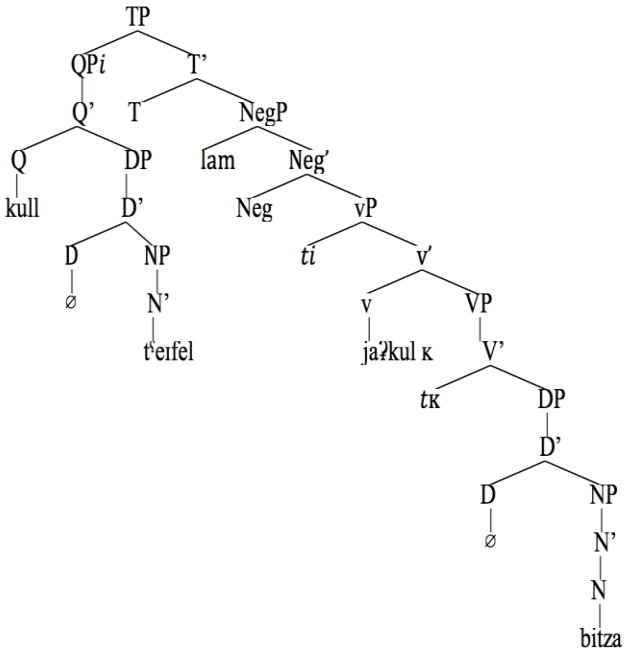

Figure 2. Unambiguity in SA

[1] In chapter 6, I show the opposite case where there is no ambiguity in sentences contain *all* and *ma* or *mu* negations.

CHAPTER 4: ISSUES WITH ‘MA’ IN SA AND JA

Negation in non-SA dialects has been documented by a number of researchers. These researchers have proposed that the only negative particle that is used in Saudi dialects is the negative *ma* (Al-Tamari, 2001; Al-Zahrani, 2015; Alsharif, 2014; Benmamoun, 2000). This negative particle is always located preverbally, both in verb initial sentences (VSO) or subject initial sentences (SVO). Al-Tamari claimed that *ma* is the only negative particle and that it is used in all Saudi dialects.

Counter to Al-Tamari’s (2001) claims, in JA, there are two types of negation: *ma*, which always precedes verbs, and *mu*, which is associated with nouns only. That is to say, it is a nominal negation. Negative *ma* in JA is unlike *ma* in SA, the negative *ma* usage in JA is restricted before verbs (11), but in SA, it can be used in the verbal and verb-less sentences (12) and (13).

11)*Ahmad ma katab l-waʒeb*
Ahmad not write the homework
‘Ahmad did not write the homework’

12)*Ma l-bent-u fi l-madrasat-i*
Not the girl-NOM in the school-GEN
‘The girl is not in the school’

13)*L-bent-u ma fi l-madrasat-i*
The girl-NOM not in the school-GEN
‘The girl is not in the school’

As presented in the above data (11), the negative *ma* in JA is adjacent to the verb only in verb initial sentences (VSO). Benmamoun (2000) claimed that the negative particle *ma* within the NEGP in SA and other Saudi Dialects is always located inside the tense phrase. The negation is specified for a [+D] feature, which is checked by the subject and by the verb which carries agreement features. He further argues that the negative *ma* is generated in [SPEC, NEGP]. The verb is moved to the NEG head to check its [+D] feature only in the past tense. In order to check the [+V] in T, the verb is integrated with [SPEC, VP] on the way to T. In order to check the tense of the [+D] feature in SA subject initial sentences, the subject must move to [SPEC, TP]. Thus, the subject moves to [SPEC, NEGP] first to check the [+D] feature, then integrates with the negative *ma*, which is located in [SPEC, NEGP]. This complex phrase then moves to [SPEC, TP]. Benmamoun claimed that the negative *ma* negates verb initial sentences with different word order when the negative *ma* takes scope with JA quantifiers. I discuss this in chapter 6.

Al-Tamari (2001) argued against Benmamoun's (2000) assumption. Al-Tamari proposed that all SA's negative particles project a NEGP. He proposed that *ma* is the head of NEGP rather than being generated in [SPEC, NEGP], as proposed by Benmamoun. Al-Tamari stated that movement is not a result of checking [+V] and [+D] features as Benmamoun proposed, but that movement is triggered by strong nominal and verbal features. In addition, these features are what determine word order in Arabic.

In this thesis, I adopt and follow Benmamoun's (2000) claims. The reason for this is that all Saudi dialects have the same negative particle before the verb, namely the negative *ma*. A sentence with the negative *ma* preceding a noun is ungrammatical. In Saudi dialects, there are only two negative particles; one used

before subjects, *mu*, and the other used before verbs, *ma*. If these particles are switched, the result is an ungrammatical sentence. In this thesis, I claim that the negative *ma* is located inside the NEGP and generated in [SPEC, NEGP] which in turn is headed by TP.

CHAPTER 5: SCOPE OF QUANTIFIERS

Before explaining the scopal relationship of negation and quantifier in JA, we need to first understand what the scope of quantifiers and the scope of negation is. In this chapter, I examine the scope of quantifiers and how different possible interpretations may result depending on the QP's position in the sentence. The next chapter discusses the scope of negation at the level of the logical form.

It is important to clarify the linguistic terminology with regards to quantification. The term *Quantifier* indicates items that merge with nouns to state the referents' number or amount. These can be indicated by words such as *every, each, all*, etc. The scope of a quantifiers in an utterance is headed by the quantifier to form the quantifier phrase QP (Hallman 2009, p. 14-20).

"The scope of a quantifier is the domain which the quantifier c-commands on semantic structure" (Pafel, 2006, p. 122), for example, *kull tʕalibah* takes scope over *baʔdʕ l-kutub* as in (14).

14)[$_{CP}$[$_{QDP}$ kull tʕalibah]][$_{VP}$ tagraʕ] [$_{QDP}$ baʔdʕ l-kutub]]

'All the students read some books'

$\forall x(T(x) \rightarrow \exists x P(x))$

The above example shows that, if there are two quantifier particles in a sentence, one quantifier has scope over the other. That means that in JA, when a sentence has two quantifiers, the scope is rigid. Here, *kull 'all'* has scope over *baʔdʕ 'some'*. The internal quantifier $\exists x$ acts on $P(x)$ only, while the external quantifier $\forall x$ acts on only one variable x $(T(x))$

15)

a) *Kull l-banat rekbu l-sajaraat*

All the girls ride the cars

'All the girls ride the cars'

Following the Verb Internal Subject Hypothesis (Koopman & Sportiche, 1991, pp. 211-258), the subject is generated in [SPEC, vP] and moves to [SPEC, TP]. Figure 3 shows that the quantifier *kull* '*all'* has scope over the DP 'the girls' and not over the other DP in the sentence 'the cars'. The DP 'the cars' can be qualified by adding another quantifier *kull 'all'* before it, as shown in (15 b).

a) *kull l-banat rekbu kull l-sajarat*

All the girls ride all the cars

'All the girls ride all the cars'

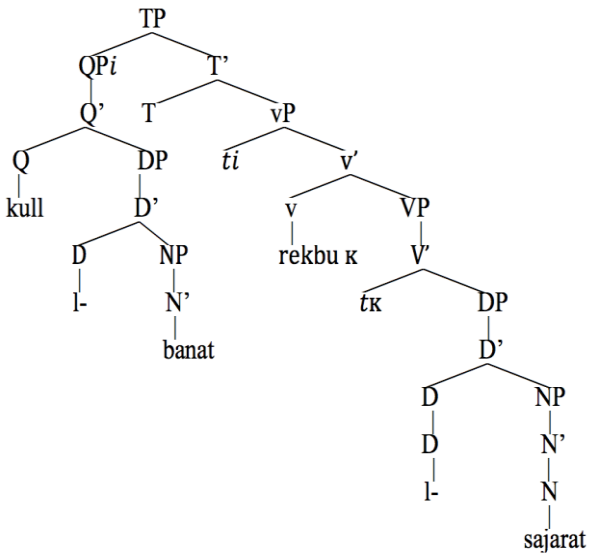

Figure 3. Scope of *kull*

Example (15 b), which is illustrated in Figure 4, shows that the first quantifier *kull 'all'* has scope over *l-banat* and the second quantifier *kull 'all'* has scope over *l-saiarat*. Thus, the scope is determined by the positions of the quantifiers at the surface structure.

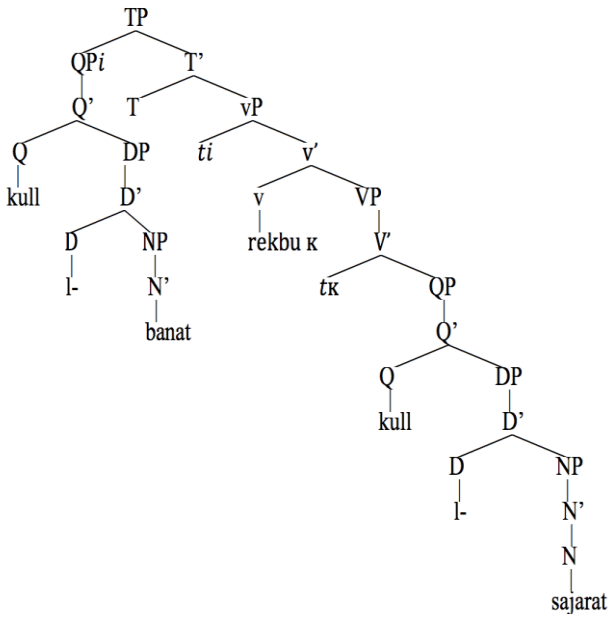

Figure 4. Scope of *kull*

CHAPTER 6: SCOPE OF NEGATION

In Jizani Arabic, all the negation operators show the scope of negation at the level of logical form. According to Carston (1996, 2002), negation takes a wide scope in logical form and has scope over its specific domain.

In the semantic literature, it is ordinary to encounter propositional operators, like negation, as taking scope over the entire proposition in Logical Form (Laka, 1994, pp. 53-55). Thus, any negative sentence like (16) has the structure in Logical Form of the sentence shown in example (17). This is diagramed in Figure 5.

16) Maha MA raħat
Maha DID NOT go

17) MA [Maha raħat]
NOT [Maha went]

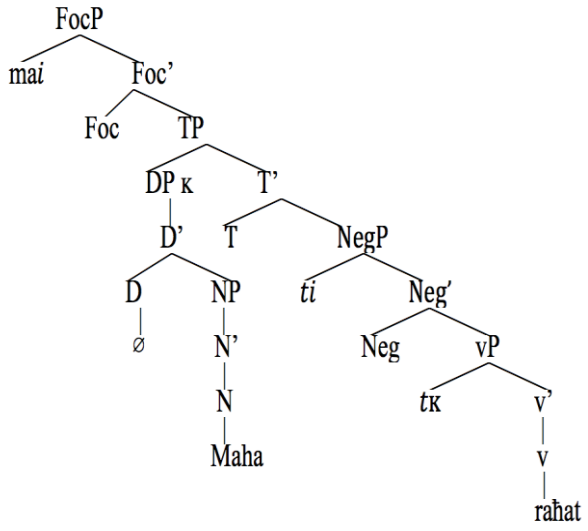

Figure 5. Negation logical form

In (17), when the negative particle has scope over the whole clause, the Tense C-command Condition must be present as a syntactic requirement. The Tense c-command Condition demands that Tense c-commands Negation, and not vise-versa (Laka, 1994, pp. 53-55). In simple negative sentences like (16), there is no reading where the focus is on the Tense. As a result, we get a contrastive focus reading as in (17). Then, the reading would be *it is not in the past that Maha went.*

In Jizani Arabic, only the verbal negative particle *ma* is used before verbs. Thus, the particle *mu*, which means 'is not', is used before NPs as nominal negation. Changing the position of the negative particle in the sentence always identifies the scope of negation. This is known as *Negative Placement Strategy* (NPS) (De Haan, 2006, p. 27).[2] Negation Placement Strategy posits that the distinction between the narrow and wide scope of negation is determined by the negation's position in the sentence (Taleghani, 2008, p. 138). This is shown in (18).

18) *L-banat ma ʔakalu*
The girls not eat
'The girls did not eat'

a) *Ma [ʔakalu [l-banat]]* ⇒ narrow scope
Not [eat [the girls]]

b) *[L-banat [ma ʔakalu]]* ⇒ wide scope
[The girls [not eat]]

[2] NPS will be applied in chapter 6 to investigate the scopal relation between negation and quantifiers in JA.

CHAPTER 7: SCOPAL RELATIONSHIP OF NEGATION AND QUANTIFIERS IN JIZANI ARABIC

In this chapter, I argue that there is a scopal relationship between negation and the Jizani's quantifier *kull 'all'* or the quantifier *kull 'every'* in the same sentence. Below, I investigate how the logical forms in these types of sentences may provide motivation for why these variations occur.

There is a clear relationship between quantifiers and negation, i.e, various readings depend on the scope of negation; whether negation is inside the scope of the quantifier or if it applies to an entire sentence containing the quantifier. In Arabic, this relation is determined by changing the position that negation is in, in the structure. According to De Haan (1997, 2006), different scope interpretations are determined by changing the position of negation within the structure. As discussed above, Negation Placement Strategy, which was proposed by De Haan (1997, 2006), determines whether the negation has wide or narrow scope with regards to the quantifier. According to Alsharif (2014, p. 209), when the negative particle *ma* moves from its preverbal position, it turns to the negative particle *mu* since it precedes a subject. This strategy is presented in Table 1.

Table 1

Scope Interpretation Strategy

Strategy type	Negation position	Scope domain
NPS	(NEG-S)-V	(NEG(S(V)))
	S(NEG-V)	(S(NEG(V)))

The scope interaction between negation and quantifiers has not been documented for JA. Below I provide the fact for this interaction by using NPS. In JA, example (19) has one and only one semantic interpretation. Example (19) cannot be an ambiguous sentence. The only reading possible is *None of the players played football* (narrow scope negation, wide scope universal quantifier, (see Figure 6). The only available logical form in JA for this sentence is ***∀x (T (x) → ~P (x)).*** There is no ambiguity of scope in this example.

19)*kull l-farig ma leʕbu korah* (S(NEG(V))) → **∀*x* (T (*x*) → ~P (*x*))**.

All the team not play football

'All the team did not play football'

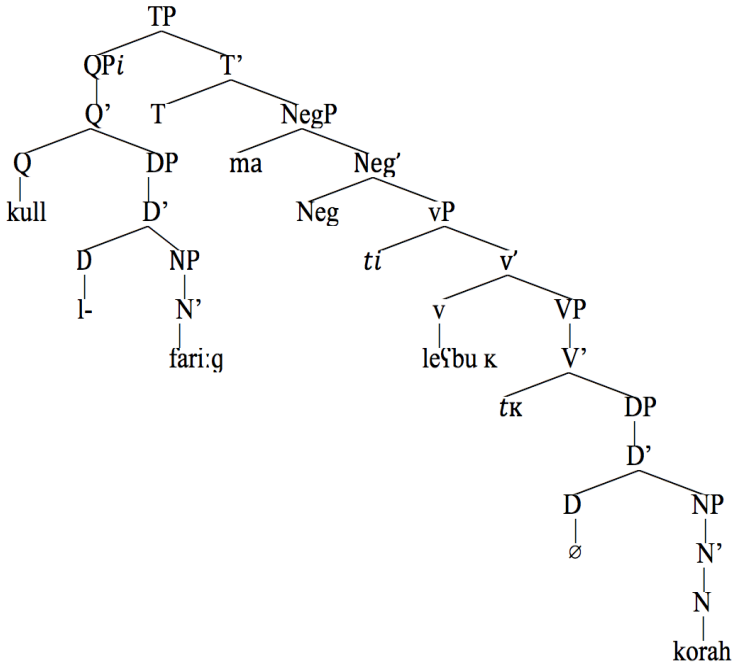

Figure 6. Narrow scope negation, wide scope universal quantifier

First of all, by changing the position of negation, the verbal negation *ma* changes to the nominal negation *mu*. As discussed in chapter 4, the use of the verbal negation *ma* before a noun is ungrammatical.

The sentence in example (19) cannot mean *some of the players played and some did not play*. It cannot have the Logical Form **~ ∀x (T(x) → P (x).** The only way to get this LF interpretation is by changing the NEG position, as shown in (20) and Figure 7.

20)*mu kull l.farig leʕbu kurah* (NEG(S(V))) → **~ ∀x (T(x) → P (x).**

not all the team play football

'Not all the team play football'

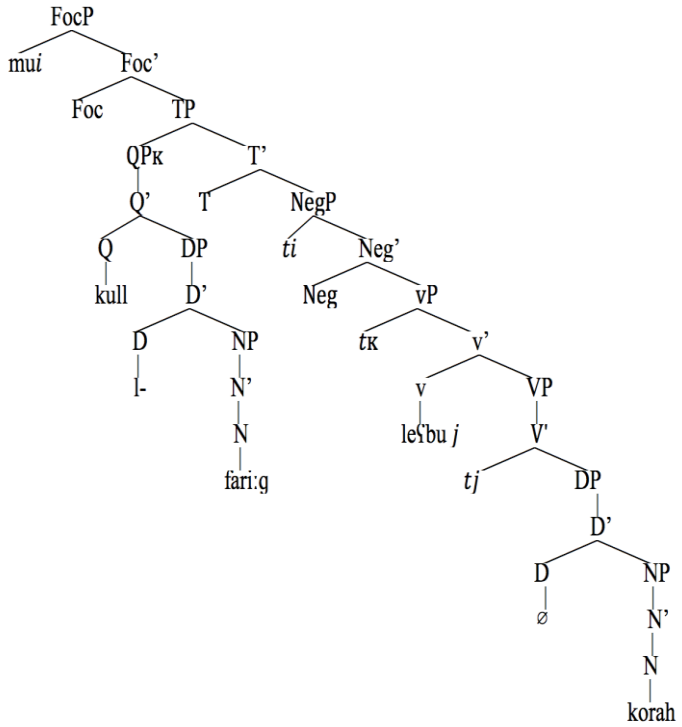

Figure 7. Wide scope negation, narrow scope universal quantifier

In JA, the sentence *kull l-farig ma leʕabu korah* ‘none of the players played football’ has only one interpretation and meaning (see figure 7). We cannot extract the third statement *mu kull l.farig leʕbu kurah* ‘some of the players played and some of them did not’ from it. By changing the position of negation, the negative particle changes from *ma* to *mu*. As a result, we have two possible interpretations. By changing the position of negation, we get a clear distinction between the narrow and wide-scope semantic interpretations.

Yaacob and Yaacob (2014, p. 6) state that if the sentence begins with the universal quantifier *kull ‘all’* and the negation has scope over the verb, the only available logical form is $\forall x\ (T\ (x) \rightarrow \sim P\ (x))$**.** However, if the position of negation is changed to precede the quantifier *kull ‘all'*, the only available logical form is $\sim \forall x\ (\ T(x) \rightarrow P\ (x))$**.**

To get these two logical forms **(** $\forall x\ (T\ (x) \rightarrow \sim P\ (x))$**,** $\sim\ \forall x\ (T\ (x) \rightarrow P\ (x)))$**,** two separate sentences need to be generated. Thus, each negation’s position in the sentence gives a different meaning. It is not possible to get two logical forms from the same sentence. We must have two different structures, each with its own distinct interpretation. This is to say, it is impossible for the statement *mu kull l-farig leʕabu korah* ‘some of the player played and some of them did not’ to mean *all the team did not play football* ‘none of the players played.’

There is only one difference between the quantifiers’ effect in Jizani Arabic, and this is the ambiguity in scope. In example (25), there is no ambiguity since SA does not have ambiguity when the quantifier is coupled with negation in a sentence (NEG + QUANT). I propose that the reason for the absence of ambiguity in Arabic when the quantifier *kull ‘all*’, is generated in a sentence with the negative *ma* or *mu* is because of the position of negation in a sentence. That means, placing negation before the quantificational noun phrase gives the sentence

a different interpretation (nominal negation) than when negation is placed after the quantificational noun phrase or before the verb (verbal negation). In Jizani Arabic, there are many particles that can be used to negate verbs, and these particles are different from those that are used to negate nouns. In Jizani Arabic, whenever the quantifier *kull 'all'* occurs with negation in a sentence, the sentence has only one semantic interpretation.

Additionally, there is no ambiguity in the scope of sentential negation if the negative particle *ma* and the verb come before or after the subject. It is not possible for the sentences in (21) and (22) to have multiple interpretations. Their structures are clarified in Figure 8 and Figure 9.

21) *ma garu kull l-tˤollab l-kitab*
not read all the students the book
'Not all of the students read the book'

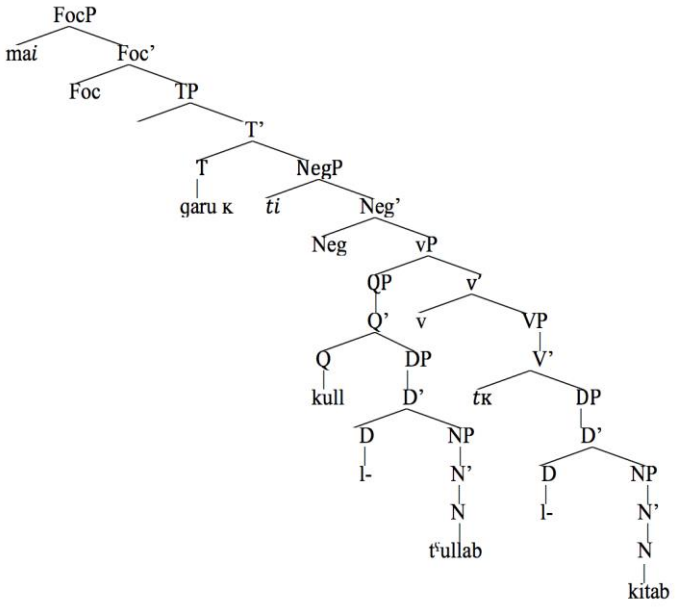

Figure 8. NEGP + QDP = ¬ > ∀, * ∀ > ¬

22) *Kull* *l-tˤollab* *ma* *garu* *l-kitab*

all the student not read the book

'All the student did not read the book'

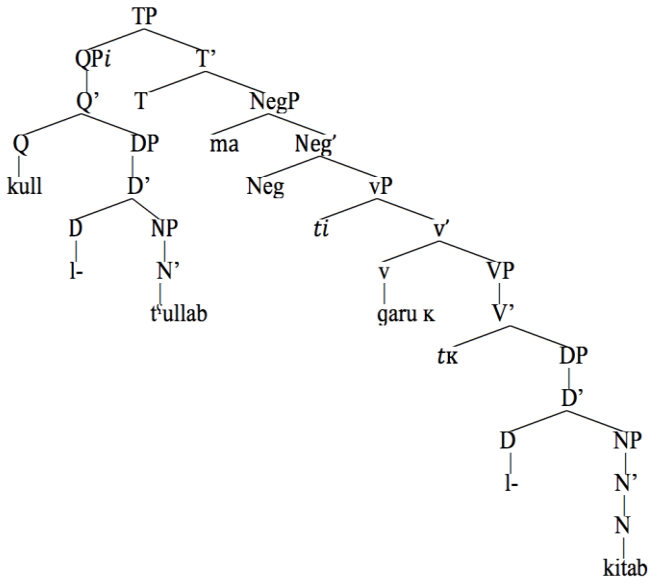

Figure 9. QDP + NEGP = ∀ > ¬, * ¬ > ∀

Note that the meaning of *ma garu kull l-tˤollabl*-kitab 'some of the students read and some of them did not' on example (21) changes when the NEGP occurs after the QP. For example, *ma garu kull l-tˤollab l-kitab* shows that the universal quantifier *all* changes to the existential quantifier *some* because the verbal negation has scope over the quantifier. In *Kull l-tˤollab ma garu l-kitab* 'none of the students read' the quantifier *kull* '*all'* has its own meaning because the quantifier has scope over the verbal negation. As a result of this, JA sentences do not have any possible ambiguity when the quantifier has scope over the negation or when the negation has scope over the quantifier. I propose that by changing the

position of NEGP to precede the QP, we get a different meaning than if the NEGP follows the QP. When this occurs, the quantifier *kull 'all'* will have scope over the negation. Whereas, the negation will have scope over the QP, if the negation precedes the QP. So, the quantifier *kull 'all'* has different semantic interpretations depending on its position in the sentence.

7.1 VSO and VOS Investigation

In this section, I discuss how quantifiers interact with regards to the scope of the negative particles *ma* and *mu*. I propose that the subject in sentences with VSO word order remains in-situ and negation moves to a [SPEC, FOCP] position. This is shown in Figure 10.

23) *ma* *ħalu* *kull* *l-tˤullab* *l-waʒeb*
not do all the students the homework
'Not all the students did the homework'

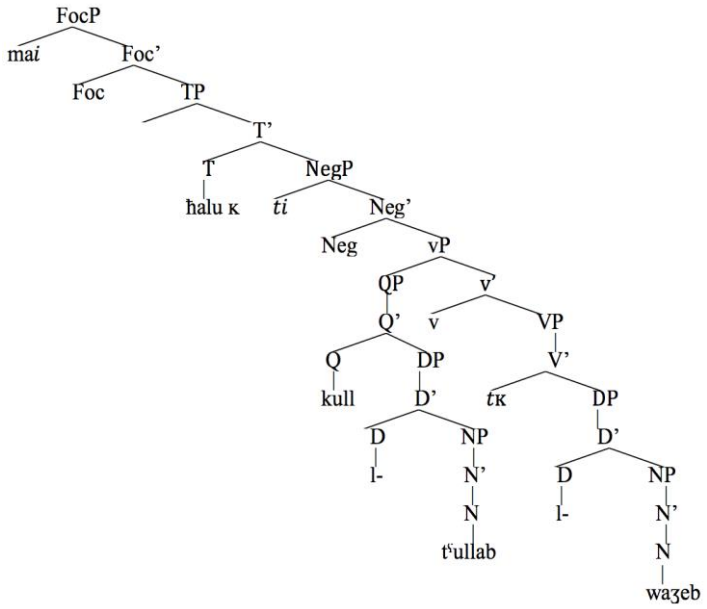

Figure 10. VSO word order

The tree in Figure 10 illustrates that the subject QP *kull l-banat* is in a lower position than the verbal negation *ma*. The only interpretation for this sentence is that *some of the girls wrote the homework and some of them did not*. Thus, the scopal relationship of negation and the quantifier is determined by changing the negation position from [SPEC, NEGP] to [SPEC, FOCP]. In this case, the subject *kull l-banat* remains in [SPEC, VP] and now intervenes between the verb *katabu* and its complement *l-waʒeb*.

There is also an interesting interaction between the quantifier and negation in sentences with VOS word order. VOS word order is derived from SVO clauses where *ma* or *mu* in [SPEC, NEGP] is moved to the [SPEC, FOCP] position. NEGP, which is in a lower position than [SPEC, TP] (the derived subject position), rises to [SPEC, FOCP] and therefore precedes the subject in the sentence. Figure 10 allows us to see this structure and how the quantifiers interact with negation regardless of the subject's derived position; at S-Structure, the quantifier is in a higher position than negation. This is shown in Figure 10. Chomsky (2003) motivated this type of movement via Feature-Attraction.

The VOS word order in JA is shown in example (24) and Figure 11. Figure 11 shows the interaction between the QDP and the negation particle *ma* when the QDP is in a position lower than the negative *ma*.

24) *ma* *ħalu* *l-waʒeb* *kull* *l-banat* ∀ > ¬ / * ¬ > ∀
not do the homework all the girls
'All the students did not write the homework'

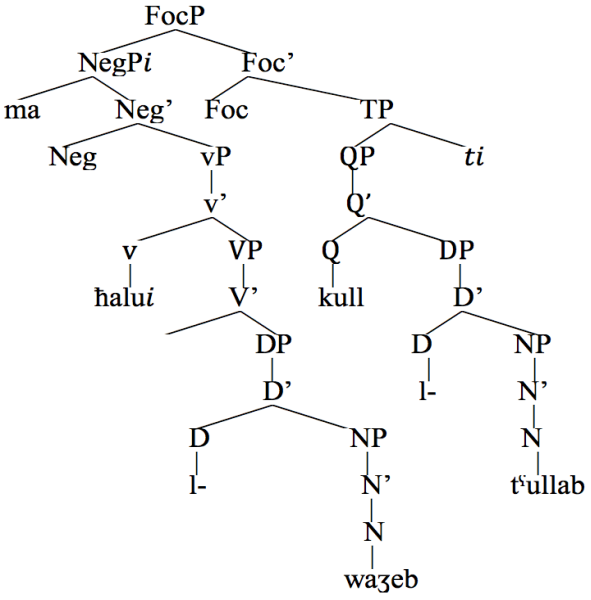

Figure 11. VOS word order

In Figure 11, the QDP *kull l-banat* is in a position lower than the negation particle *ma*. The subject *kull l-banat* appears at the end of the sentence postverbally, whereas the negation particle *ma* appears preverbally. The interpretation of this sentence is *there are a number of girls and none of them did the homework*. The interpretation that says *some of the girls did the homework and some of them did not* is unavailable and ungrammatical. That means the only possible interpretation is *all of the girls did not write the homework*. This sentence is fully grammatical.

The NEGP moves to the FOCP which is in a higher position than the TP. As we can see in this word order, negation and the quantifier do not c-command one another. However, the quantifier was taking scope over negation only at one point of the derivation before the movement of the NEGP to the FOCP.

7.2 Further Issue with Scope Ambiguity

Aoun and Li (1989, 1993) have stated that, if there are two quantified expressions, an *x* quantifier has scope over a *y* quantifier if and only if *x* c-commands *y* in the QP. However, when a sentence includes two quantifiers or a quantifier with a negation, scope ambiguity often arises. The following examples provided by Kurtzman and MacDonald (1993) (25) and Tunstall (1998) (26) demonstrate that getting two possible readings depends on having two quantified DPs.

25) Every kid climbed a tree.

a) $(\forall x)(\exists y)(x$ is a kid & y is a tree & x climbed $y)$

[read as: "For every kid *x*, there is a tree *y*, such that *x* climbed *y*"]

b) $(\exists y)(\forall x)(x$ is a kid & y is a tree & x climbed $y)$

[read as: "There is a tree *y*, such that for every kid *x*, *x* climbed *y*"]

26) Mary showed a book to every child.

a) $(\exists x)(\forall y)(x$ is a book & y is a child & Mary showed x to $y)$

[read as: "There is a book x, such that for every child y, Mary showed x to y"]

b) $(\forall y)(\exists x)(x$ is a book & y is a child & Mary showed x to $y)$

[read as: "For every child *y*, there is a book *x*, such that Mary *x* to *y*"]

There are different semantic interpretations due to scope ambiguity when the existential quantifier's order differs in each sentence. We see this can also occur in Jizani Arabic, as shown in Figure 12.

27) *Kull* *ʤaheɪl* *tisalag* *ʃaʤarah.*

every kid climb tree

'Every kid climbed a tree.'

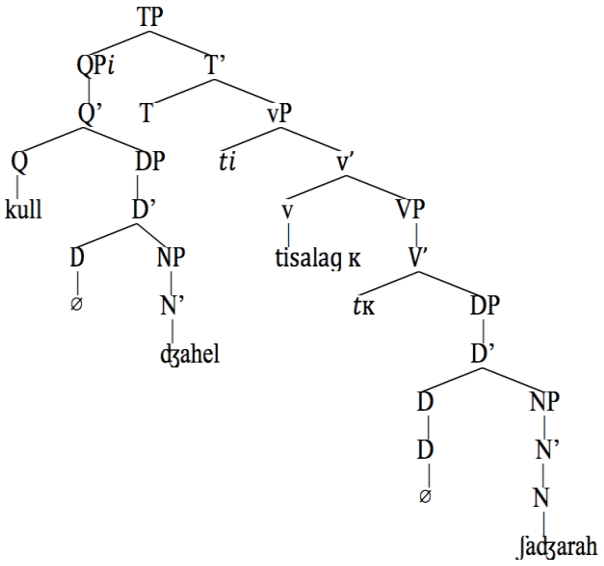

Figure 12. ∀ > ∃, * ∃ > ∀

The universal quantifier has wide scope over the existential quantifier; thus, the sentence can be read as *There is some tree for every kid to climb*. Interpreting this sentence as *Every kid climbed the same tree* is also grammatical and considered as a correct interpretation in JA, but it is ungrammatical in SA, as mentioned in chapter 3.

In order to get the interpretation that indicates *every child climbed only one single tree*, the indefinite marker must be replaced by the definite marker, as shown in (28). In this case, the wide scope will be switched to a narrow scope reading because of the definite marker *ʔaʃ* as displayed in Figure 13.

28) *Kull dʒaheɪl tisalag ʔaʃ- ʃadʒarah.*

every kid climb the tree

'Every kid climbed the tree.'

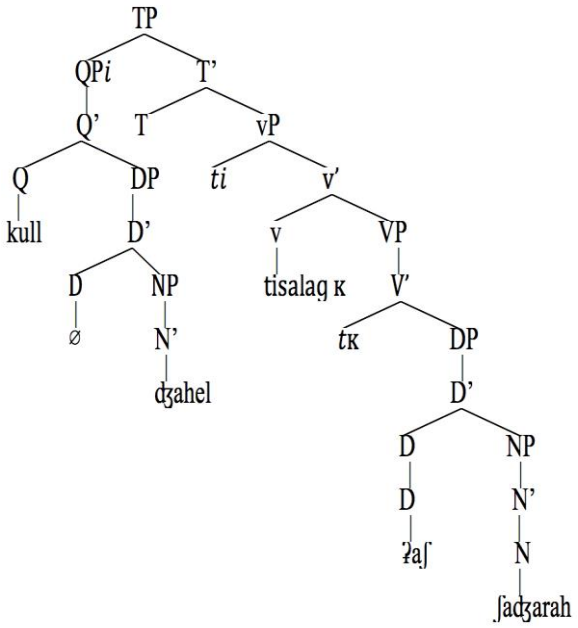

Figure 13. ∃ > ∀, * ∀ > ∃

Now, I turn to the scope relation between negation and the universal quantifier *kull 'every'* in Jizani Arabic. I will discuss that, whenever the universal quantifier *kull 'every'* and negation are combined in a sentence, scope ambiguity arises. That means there will be two interpretations in regards to the wide and narrow scope.

Example (29) shows that, in JA, there is ambiguity in the semantics, even though the phrase structure is unambiguous in its "surface" syntax. Note that in JA a single sentence may have two interpretations if it combines negation with the universal quantifier *kull 'every.'*

29) *Kull tˁaleb ma gara kitab l-bareħ*

every studnt not read book yesterday

'Every student did not read a book yesterday'

Reading A: none of the students read.

Reading B: some of the students read and some of them did not.

In SA, any sentential negation that is combined with the universal quantifier *kull* '*every*', as in the above sentence, looks clear and understandable. In SA, this sentence has only one interpretation which is *none of the students read* regarding to the surface scope. Whereas in JA, the sentence incurs both reading A and reading B (from 29) according to the surface and inverse scope.

Below in example (30), I discuss how scope relations are affected by changing the position of negation in JA. If negation moves to a position higher than the QP, there are two possible interpretations. This is shown in reading A and B in example (30). If we consider the surface scope, we get reading A, *none of the students read*. Whereas, by considering the inverse scope, we get reading B, *some of the students did and some of them did not*.

30)*mu kull tˁaleb gara kitab l-bareħ*

not every studnt read book yesterday

'Not every student read a book yesterday'

Reading A: none of the students read.

Reading B: some of the students did and some of them did not.

The meaning of the sentence in example (30) changes since the negative *mu* has scope over the quantifier *kull* '*every*'. In example (29) *Kull tˤaleb ma gara kitab l-bareħ,* the negation has a narrow scope with the quantifier and this action gives different interpretation than *mu kull tˤaleb gara kitab l-bareħ* in (30).

7.2.1. Scope Ambiguity Resolution in JA

Scope ambiguity has not been documented in JA. I propose that there is a principle that can be used to resolve this sort of ambiguity, and this is shown above in example (30). This principle is known as The Structural Preference Principle. This principle focuses on the ambiguity of scope with regards to quantifier-negation interactions. According to Kurtzman and MacDonald (1993), QPs, in a particular position, are more likely to have wide scope than other operators such as negation. The ambiguity resolution mechanism in the Structural Preference Principle gives a wide scope reading to a host of quantified NPs such as quantified subjects, topics, initial QPs, c-commanding NPs, agents, external arguments. If we assume that the QP has a wide scope over the negation, we may get only one interpretation.

31) *Kull tˤaleb ma gara kitab l-bareħ*

every studnt not read book yesterday

'Every student did not read a book yesterday'

32) *Ma gara kull tˤaleb kitab l-bareħ*

not read every studnt book yesterday

'Every student did not read a book yesterday'

If we apply the Structural Preference Principle in (31) and (32), we can see that the QPs have a wide scope over the negation and in spite of the QPs' position, we get only one interpretation. The only possible interpretation for these sentences is *none of the students read a book*. In this reading, following the Structural Preference Principle, only surface scope is acceptable in *Kull tˤaleb ma gara kitab l-bareħ* (initial QP*)*. Whereas, inverse scope is acceptable in *ma gara kull tˤaleb kitab l-bareħ* (initial negation).

CHAPTER 8: CONCLUSION

In this thesis, I have investigated the interaction between quantifiers and negation with regards to how the scope of each element is interpreted. I have shown that, in sentences where ambiguity exists between sentential negation and the quantifier *kull 'every'* in JA, no such ambiguity exists in SA. Following Benmamoun (2000), I argue that the syntactic position of the negative particle *ma* is in [SPEC, NEGP]. I show that by applying the Structure Preference Principle (Kurtzman & MacDonald, 1993) to the JA sentences, scopal ambiguity is resolved. Following this line of research, I have argued that QPs in a particular position are more likely to have wide scope than other operators, such as negation. I have shown that a strategy in JA for ambiguity resolution is the interpretation of LF for the quantifier to take wide scope over negation despite its surface structure position. When this occurs, scope ambiguity disappears.

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