The syntax of floating quantifiers: stranding revisited
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Chapter 3: Issues in the Study of Negated Floating Quantifiers

0. Introduction

In the previous chapter we examined the ability of the Stranding Analysis originally developed in Sportiche (1988) to account for floating quantifiers in the Germanic and Romance languages, but the data contained only non-negated quantifiers. The purpose of this chapter is to expand our evaluation of the Stranding Analysis by considering the floating of negated quantifiers as exemplified in the following German sentences:

(1) a. Nicht alle die Studenten haben das Buch gelesen.
    not all the students have the book read

    b. Die Studenten haben nicht alle das Buch gelesen.
    the students have not all the book read

Based on the data presented in this chapter, I will propose my own theory of quantifier negation. My theory has three principal foundations. The first of these is the Stranding Analysis of floating quantifiers. The second is the theory of sentential negation presented in Zeijlstra (2004), which I adapt to constituent or quantifier negation. The third is the hypothesis in Cirillo (2007a) whereby a negation marker that is contained in a negated quantifier such as not all can be stranded by itself, without the quantifier, and thereby produce inverse scope.

While presenting my theory of quantifier negation in this chapter I will also be discussing some interesting differences between negated quantifiers in the Germanic and the Romance languages. For the sake of clarification, I point out that I use the term negated quantifier when referring to quantifiers such as those in (1) in order to distinguish them from negative quantifiers such as no one and nothing and their cross-linguistic equivalents.

After this brief introductory section, the remainder of this chapter is divided into seven additional sections. Section 1 is an introduction to the concept of negated quantifiers and presents evidence that negated quantifiers are truly negated constituents and not just quantifiers that fall under the scope of sentential negation. In Section 2, I take data from Chapter 2 and negate the stranded quantifiers to show that the Stranding Analysis can account for negated as well as non-negated stranded quantifiers. Most of the data in Section 2 will be from the Germanic languages, since, as shown in Chapter 1, the Romance languages do not allow the stranding of negated quantifiers. Reasons for this will be explored in Sections 5 and 6 of this chapter.

In Section 3, which concentrates mainly on the West Germanic languages, I expound on the hypothesis presented in Cirillo (2007a) whereby the negation marker
in a negated quantifier such as *not all* can be stranded by itself, without its associated quantifier. This idea, which I refer to as the *Neg Stranding Hypothesis*, can be seen as an outgrowth of the Stranding Analysis of floating quantifiers. I will argue that the Neg Stranding Hypothesis is the best way to explain the inverse scope reading in a sentence such as the following, which I will claim is the same as (1b) with Neg Stranding:

(2) Alle die Studenten haben *nicht* das Buch gelesen.
    all the students have not the book read

Section 4 presents alternative approaches to the Neg Stranding Hypothesis, which are shown to be inadequate. Section 5 introduces negated quantifiers in the Romance languages and illustrates how they differ from their counterparts in the Germanic languages. In Section 6 I offer my own theory of negated quantifiers that attempts to explain the differences between the Romance and Germanic languages illustrated in the previous section. My theory is basically an adaptation of the theory of sentential negation in Zeijlstra (2004) to constituent (quantifier) negation. Section 7 is a brief summary of the chapter.

Before proceeding, a word on the terms *constituent negation* and *sentential negation* is in order, since these terms can be confusing. Consider the following two sentences:

(3) a. Not all the inhabitants of Nepal have seen a yeti.
    b. Many inhabitants of Nepal have not seen a yeti.

Traditionally, one would say that (3a) was a case of constituent negation and (3b) a case of sentential negation. However, if one follows the arguments in Zeijlstra (2004) that a sentential negation marker in the Germanic languages is located in [SPEC, vP], one would have to say that sentential negation is also a form of constituent negation, that is, the negation of a verbal phrase. Applying Zeijlstra’s theory to the nominal domain, I will argue in this chapter that the negation marker is in [SPEC, QP] in (3a) just as it is in the specifier position of a [SPEC, PerfP] in (3b):

(4) a.                      b.  PerfP
    SPEC                   Perf
    not                    have
    QP                     vP
    Q’                     seen a yeti
    all
    DP
    the inhabitants

The point of the analysis in (4) is that one must be a bit careful in using the term *sentential negation* because sentential negation is also constituent negation. The
terminology becomes more complicated if we consider scopal relations, since a so-called sentential negation marker can, by means of the proper c-command relationship, have the effect of a constituent negation marker such as the one in (4a).

The following Italian sentences illustrate this:

(5)  

a. Tutti gli studenti non sono venuti.  
all the students not are come  

b. Gli studenti non sono tutti venuti.  
the students not are all come  

The (a) sentence would be construed as a case of normal sentential negation, since the negation marker immediately precedes the auxiliary verb and does not take scope over the universal quantifier. The only available reading is $[\forall > \neg]$. The (b) sentence is the same as the (a) sentence except that the universal quantifier has been stranded in its base-position, which is c-commanded by the negation marker. The only possible reading is $[\neg > \forall]$. Thus, the sentential negation marker in (5b) produces a constituent (quantifier) negation effect.

Another issue with the traditional distinction between constituent and sentential negation is that the negation of a verb or verbal phrase does not in and of itself suffice to produce sentential negation. As I will demonstrate in Section 1.1, in order to produce sentential negation, it must be the finite or tensed verb that is negated. Examples (6a) and (6b) would thus be instances of sentential and constituent negation, respectively:

(6)  

a. The United States did not decide to sign the Kyoto Agreement.  
b. The United States decided to not sign the Kyoto Agreement.  

The reader can easily see that one must be careful in using the terms sentential negation and constituent negation and that clear definitions are necessary. In this chapter, the term sentential negation is to be interpreted as the negation of a finite verbal phrase like the ones in (3b), (5a) and (6a), and constituent negation is to be understood as the negation of any other constituent, such as the QP in (4a) or the complement vP in (6b). I will justify these definitions in Section 1.1 of this chapter with data from the Germanic and Romance languages when I discuss Klima (1964).
1. The Existence of Floating Negated Quantifiers

1.0 Introduction

During the course of my research I have been confronted (mainly in personal conversations and correspondence) with the challenge that a negated floating quantifier such as the one in (1b) is not a negated quantifier at all but a floating quantifier that falls under the scope of the “sentential” negation marker. Therefore, before discussing floating negated quantifiers, I want to demonstrate that they are in fact negated constituents independent of sentential negation and not simply quantifiers that happen to fall under the scope of sentential negation. I will do this in this section, which is divided into three sub-sections. In Section 1.1 I propose what I consider to be a clear definition of sentential negation. In Section 1.2 I discuss negated constituents in general, and in Section 1.3 I discuss negated quantifiers in particular.

1.1 Sentential Negation

The discussion of how to distinguish sentential from constituent negation seems to have originated with Klima (1964), who developed three tests for sentential vs. constituent negation and in so doing made some interesting, useful observations. Klima’s three tests are the either/too test, the not even test and the positive question tag test, illustrated in the following sentences:¹

(7)  a. Bill doesn’t drive a car and John doesn’t either/*too.
    b. Not long ago Bill drove a car and John did *either/too.

(8)  a. Bill doesn’t drive a car, not even a Fiat 500.
    b. *Not long ago Bill drove a car, not even a Fiat 500.

(9)  a. Bill doesn’t drive a car, does he?
    b. *Not long ago Bill drove a car, did he?

Klima made the observation that these tests apply not only to sentential negation, but also to negative quantifiers:

(10) a. Nobody likes Mary, and John doesn’t either.
    b. Nobody likes Mary, not even John.
    c. Nobody drives a car, does he/do they?

As pointed out in Zeijlstra (2004), Klima’s tests have come under criticism because they sometimes produce conflicting results. Examples of criticism of Klima can be found in Jackendoff (1969 and 1972), Ross (1973) and Culicover (1981). I would like to add my own observation that negated quantifiers pass two out of three of Klima’s sentential negation tests, which they theoretically should not do:

¹ Klima’s arguments and example sentences are presented in Zeijlstra 2004 (pages 47-51).
(11) a. Not all linguists are bad, and not all anthropologists are either/*too.
   b. *Not all linguists speak an Asian language, not even Japanese.
   c. Not all the students read this book, did they?

The problems with Klima’s tests notwithstanding, they help provide evidence that a negated complement (non-finite) verbal phrase does not produce sentential negation effects. Observe the following sentences:

(12) a. Bill decided to not sign the contract, and John did *either/too.
   b. *Bill hates to not get up early, not even on Sundays.
   c. *Bill decided to not sign the contract, did he?

Apart from Klima’s tests, I can offer additional evidence, this time from Italian, that the negation of a non-finite verbal complement does not have the effect of sentential negation. Consider the following two sentences:

(13) a. I senatori non possono ratificarlo tutti. \[\neg > \forall\]  
    the senators not can ratify it all

   b. I senatori possono non ratificarlo tutti. \[\forall > \neg\]  
    the senators can not ratify it all

The first sentence is a case of sentential negation, since the negation marker precedes the finite modal verb *possono. The only possible reading is \[\neg > \forall\], with the meaning *Not all the senators can ratify it. The second sentence is a case of constituent negation, since the negation marker precedes the infinitival form *ratificarlo (ratify it), which has a clitic pronoun attached to it. This sentence is interesting because it does not show signs of sentential negation. It has a \[\forall > \neg\] reading. Based on the evidence presented in this sub-section, I will use the term *sentential negation* to mean the negation of a finite verbal phrase and *constituent negation* to mean the negation of any other constituent. In this chapter, I will of course be talking mainly about negated quantifiers.

Now that we have a definition of sentential negation, I would like to take a closer look at the meaning of *constituent negation* and to show that negated constituents are independent of sentential negation and not simply non-negated elements that happen to fall under the scope of the sentential negation marker.

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2 This is my own observation and these sentences are not taken from Klima. I am simply applying Klima’s tests to my own data.
1.2 Constituent Negation in General

Consider the following sentences from English, German and French, which contain a negated PP, DP and AdvP, respectively:

(14) He ran not through the yard but around the house.

(15) Er hat nicht den Hund sondern die Katze gefüttert.

(16) Il a habité pas très loin de la mer.

In these sentences it is easy to demonstrate that the negation markers *not, nicht* and *pas* are not normal sentential negation markers that somehow take scope over a non-verbal constituent. Let’s begin with (14). If this sentence were a case of sentential negation, it would most certainly have to contain do-insertion. There is additional evidence that (14) is an instance of PP negation and not sentential negation. Under normal circumstances, only like categories can be contrasted in a *not...but* construction. If in (14) the sentence as a whole rather than just a PP were being negated, a contrast with the second PP *around the house* would be ungrammatical. This becomes evident if we try to contrast unlike elements. In the following example a *not...but* construction does not work because a PP is being contrasted with a full sentence:

(17) *He ran not through the yard but he ran around the house.*

If the first clause in (17) contained sentential negation, a *not...but* construction would felicitously contrast the first clause with the full sentence *he ran around the house*. The reason for the ungrammaticality of (17) is thus the same as the reason for the grammaticality of (14). The first clause in both sentences contains constituent negation, not sentential negation, and this shows that constituent negation is a phenomenon independent of sentential negation.

Let’s now consider whether or not (15) involves sentential negation. There are two signs that this sentence cannot involve sentential negation. First of all, the DP *den Hund (the dog)* is being contrasted with another DP, *die Katze (the cat)*, in a *not...but* construction, which means that the negation marker must be negating the DP and not the finite verb. Secondly, in German a direct object can be topicalised:

(18) Den Hund hat er nicht gefüttert.

If the phrase *nicht den Hund (not the dog)* in (15) is a case of constituent negation, a negated QP, it should be possible to topicalise it. This expectation is met:
This sentence, which is simply (15) with topicalisation, demonstrates unequivocally that \textit{nicht den Hund} (\textit{not the dog}) is a constituent, also in (15), and that no sentential negation (negation of a finite verbal phrase) is involved. Example (19) could not be a case of sentential negation anyway, because in the rare event that sentential negation appears sentence-initially in German it must be followed by the verb that it negates:

\begin{enumerate}
\item[(19)] \textit{Nicht den Hund hat er gefüttert, sondern die Katze.}
\end{enumerate}

\begin{enumerate}
\item[(19)] \textit{not the dog has he fed but the cat}
\end{enumerate}

Finally, we look at (16). The fact that this sentence is grammatical in standard, non-colloquial French proves that it does not involve sentential negation. If it involved sentential negation, it would have to contain the negative particle \textit{ne} and the negation marker \textit{pas} would be in a different place, as follows:

\begin{enumerate}
\item[(20)] \textit{Nicht glaube ich an Himmel, Hölle oder Fegefeuer.}
\end{enumerate}

\begin{enumerate}
\item[(20)] \textit{not believe I in heaven hell or purgatory}
\end{enumerate}

The sentences in (14) through (21) show that a negated constituent is not necessarily a non-negated constituent that falls under the scope of sentential negation. There are two other criteria that can be used to demonstrate that sentential and constituent negation are different, namely, \textit{positioning} and \textit{co-occurrence}. Regarding positioning, we saw in (16) and (21) that the French negation marker \textit{pas} occupies a different place depending upon whether it is a sentential or constituent negation marker. Furthermore, in English, sentential negation can never appear in sentence-initial position and in Italian it can only appear in sentence-initial position if it immediately precedes a verb. The following English and Italian sentences must therefore be instances of constituent negation:

\begin{enumerate}
\item[(22)] \textit{Not all animals are mammals.}
\end{enumerate}

\begin{enumerate}
\item[(22)] \textit{not all animals are mammals.}
\end{enumerate}

\begin{enumerate}
\item[(23)] \textit{Non ognuno può essere poeta.}
\end{enumerate}

\begin{enumerate}
\item[(23)] \textit{not everyone can be poet}
\end{enumerate}

Perhaps the most convincing evidence that constituent negation is not simply a form of sentential negation that also takes scope over an additional constituent is the fact that sentential and constituent negation can co-occur:

\begin{enumerate}
\item[(24)] \textit{Not everyone has not read the book.}
\end{enumerate}

\begin{enumerate}
\item[(24)] \textit{not everyone has not read the book.}
\end{enumerate}

We have demonstrated that negated constituents exist independently of sentential negation. To really drive home my point, I would now like to look at negated quantifiers in particular, since they are the main subject of this chapter.
1.3 Negated Quantifiers

What makes quantifiers different from many other kinds of syntactic elements is that they take scope. Since negation also takes scope, the combination of a quantifier with negation deserves special consideration. There is, I believe, convincing evidence for the existence of negated quantifiers. Consider the following two sentences:

(25) Not all the students are reading the book.
(26) All the students are not reading the book.

Sentence (25) is unambiguous. Its only possible interpretation is as follows:

(27) \( \neg \forall x (Sx \rightarrow Rxb) \)

The negation marker in (25) takes direct scope over the quantifier. This immediately suggests that not all forms a kind of constituent, that is, a negated quantifier. Example (26), unlike (25), is ambiguous. The negation marker in (26) can take scope over the quantifier, producing a reading identical to that of (25) and (27), or it can take scope over the ProgP are reading the book, producing the following reading:

(28) \( \forall x (Sx \rightarrow \neg Rxb) \)

The fact that (26) needs to be analysed in two different ways, illustrated in (27) and (28), provides semantic evidence for the need to differentiate between sentential and quantifier negation. Besides this semantic evidence, there is also syntactic evidence for differentiating between a negated quantifier and sentential negation. One example of syntactic evidence, already presented with example (14) above, is the fact that do-insertion always applies in the case of indicative sentential negation in English, but not always in the case of negated quantifiers:

(29) a. All boys do not like football.
    b. Not all boys like football.
    c. *Not all boys do like football.

In these examples, the (a) sentence is ambiguous for sentential or quantifier negation, and do-insertion is obligatory. In the unambiguous (b) sentence, do-insertion is impossible, as is shown in (c). The (b) sentence therefore cannot be a case of sentential negation and must be an instance of constituent negation.

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3 This is to be read, “Not for all X is it the case that if X is a student X is reading the book.”
4 This is to be read, “For all X it is the case that if X is a student X is not reading the book.”
5 The (c) sentence can of course be grammatical if the word do is very strongly emphasized, but this is only possible in a very specific context that involves contradiction or contrast.
Incidentally, the fact that the (a) sentence requires *do*-insertion regardless of whether the reading is one of sentential negation or quantifier negation may come as a surprise to some readers. A discussion of this here would take us too far away from our main topic. Interested readers are referred to the appendix to this chapter.

Additional evidence that negated quantifiers are independent of sentential negation can be found by looking at negative polarity items. In Zeijlstra (2004) it is shown that sentential negation but not a negated constituent licenses a negative polarity item or NPI. I offer the following examples to illustrate that negated quantifiers do not license NPIs and are therefore like normal negated constituents, not like sentential negation:

(30)  
   a. All the boys have not eaten anything.  
   b. */? Not all the boys have eaten anything.

Sentence (30a) provides clear evidence that sentential and quantifier negation are independent, because it has two readings, and only the \([\forall > \neg] \) or sentential negation reading, with primary stress on *all*, licenses a NPI. However, if the negation marker in (30a) is stressed, the sentence has a \([\neg > \forall] \) or negated quantifier reading and it becomes just as ungrammatical or highly marginal as (30b).

The fact that in languages like German a negated object quantifier phrase can be topicalised also provides evidence that the negation marker forms a constituent with the QP:

(31)  
   a. Nicht alle die Bücher hat er gelesen.  
   b. Er hat nicht alle die Bücher gelesen. 

Example (31a) could not possibly be a case of sentential negation. Example (31b) contains the same elements and has the same meaning and scopal relationships as (31a). It would not make sense to claim that (31a) is an instance of constituent negation and (31b) is sentential negation.

To close off this section I will return to the subject of the co-occurrence of sentential and quantifier negation, illustrated in the following German and Italian sentences:

(32)  
   Nicht alle die Studenten haben das Buch nicht gelesen.  
   not all the students have the book not read.

(33)  
   Non tutti gli studenti non hanno letto il libro. 

---

What is interesting is that in the Germanic languages even a *stranded* negated quantifier can co-occur with a sentential negation marker, and the stranded negated quantifier must come before the sentential negation marker. The following German and English sentences demonstrate this:

(34) a. Die Studenten haben das Buch nicht alle nicht gelesen.
   the students have the book not all not read

   b. *Die Studenten haben das Buch nicht alle gelesen.
      the students have the book not all read

(35) a. The students have not all not read the book.

   b. *The students have not not all read the book.

In these sentences the fact that the negated quantifier must come before the sentential negation marker, which is the negator of a finite PerP, shows two things. It shows that constituent and sentential negation cannot be considered to be the same thing, and it shows that a floating negated quantifier cannot possibly be a normal (unnegated) floating quantifier that happens to fall under the scope of sentential negation.

We can conclude from the evidence in this sub-section that negated quantifiers exist and that they differ semantically and syntactically from what is traditionally referred to as sentential negation. We can also conclude that a negated quantifier can be stranded and that a stranded negated quantifier is not simply a floating quantifier that happens to fall under the scope of sentential negation. Based on this evidence, we can take a look at whether the Stranding Analysis can account for floating negated quantifiers.

2. The Stranding Analysis and Negated Quantifiers

2.0 Introduction

In Chapter 2 we looked at non-negated floating quantifiers in a variety of different constructions within the framework of the Stranding Analysis. The goal of this section is the same as that of Chapter 2 except that we will be looking at negated quantifiers. Many of the examples that follow have been constructed by taking sentences from Chapter 2 and simply negating the quantifier. This section is divided into seven sub-sections. Section 2.1 deals with the stranding of negated quantifiers in mono-clausal sentences. Sections 2.2 and 2.3 cover raising verbs and control verbs, respectively. Section 2.4 is about the stranding of negated quantifiers under A-bar movement. Section 2.5 looks at Small Clauses and Section 2.6 is concerned with topicalisation and remnant movement. Section 2.7 is a brief summary.

As I will explain in Sections 5 and 6 of this chapter, negated quantifiers cannot be stranded in the Romance languages. Consequently, the data in this chapter are
primarily from the Germanic languages. As mentioned in Chapter 1 and in the introduction to this chapter, I assume the structure in (36) for negated quantifiers in the Germanic languages. This assumption is an extension of the arguments in Zeijlstra (2004) that sentential negation in the Germanic languages is not a syntactic head but a maximal projection that occupies a specifier position.

\[
(36) \quad \begin{array}{c}
\text{QP} \\
\text{SPEC} \\
\text{not} \\
\text{SPEC} \\
\text{Q'} \\
\text{Q} \\
\text{DP} \\
\text{all} \\
\text{the students}
\end{array}
\]

2.1 Stranded Negated Quantifiers in Mono-Clausal Sentences

We begin with data from English:

\[
(37) \quad \begin{array}{c}
a. \quad \text{Not all the children may have been watching the movie.} \\
b. \quad *\text{The children not all may have been watching the movie.} \\
c. \quad \text{The children may not all have been watching the movie.} \\
d. \quad \text{The children may have not all been watching the movie.} \\
e. \quad *\text{The children may have been not all watching the movie.} \\
f. \quad *\text{The children may have been watching not all the movie.}
\end{array}
\]

Except for (b), these sentences elicit the same grammaticality judgements as their non-negated counterparts in Chapter 2. In (a) no stranding has taken place. I’ll return to (b) shortly. In (c) the negated quantifier could be stranded in [SPEC, PerfP], since it is adjacent to the Perfect auxiliary, or it could be in [SPEC, ModalP] if the modal verb has moved to AgrS. In examples (d) and (e) the negated quantifier has been stranded in [SPEC, ProgP] and [SPEC, vP], respectively. In (f), the negated quantifier is below its base-position. Example (b) requires a more detailed explanation. As I mentioned in Section 1.2 and will further discuss in Section 3.1 and in the appendix to this chapter, problems of this sort often have to do with the fact that the negation marker in English, regardless of whether it is a sentential or constituent negation marker, normally requires some kind of support to its left, such as \textit{do}-insertion. Example (37b) can thus perhaps be explained as follows:

As I discussed in Chapter 2, Section 1, under example (5b), there is evidence that modal verbs do not always move to T and AgrS in English. This is evidenced by the fact that (37b) without negation (which is example (5b) in Chapter 2, Section 1) is grammatical:

\[
(38) \quad \text{The children all may have been watching the movie.}
\]
In this sentence, and in (37b), if the modal verb is in its base-position, the quantifier could be in [SPEC, ModalP] or [SPEC, TP]. The negation marker in (37b) is unsupported, and do-insertion can never take place if an auxiliary or a modal is present. This is why (37b) is ungrammatical. Let’s now look at stranded negated quantifiers in English passive sentences:

(39)  
- a. Not all the patients may have been being examined.
- b. *The patients not all may have been being examined.
- c. The patients may not all have been being examined.
- d. The patients may have not all been being examined.
- e. The patients may have been not all being examined.
- f. */??The patients may have been being not all examined.
- g. *The patients may have been being examined not all.

In (a) no stranding has taken place. Example (b) poses the same issue as its counterpart in (37). In (c) the negated quantifier could be in [SPEC, PerfP] or in [SPEC, ModalP]. In examples (d) and (e) the negated quantifier has been stranded in [SPEC, ProgP] and [SPEC, PassP], respectively. In (f) we see the same problem that we saw in example (7f) in Chapter 2. Passive participles are adjectival, and if all appears before an adjective there is a strong tendency in English to interpret it as an adverbial meaning completely. This may interfere with the floating quantifier interpretation. This claim is supported by the fact that (39f), like (7f) in Chapter 2, improves if an adverb appears between the quantifier and the participle, as demonstrated in (40). Example (39g) is impossible because the negated quantifier is below its base-position.

(40) ?The patients may have been being not all carefully examined.

We will now take a look at whether the Stranding Analysis can account for negated floating quantifiers in German. The following sentences are the same as the examples in (67) in Chapter 2 except that the quantifiers have been negated:

(41)  
- a. Nicht alle die Studenten mögen das Buch gelesen haben.
   not all the students may the book read have
- b. *Die Studenten nicht alle mögen das Buch gelesen haben.
   the students not all may the book read have
- c. Die Studenten mögen nicht alle das Buch gelesen haben.
   the students may not all the book read have
- d. Die Studenten mögen das Buch nicht alle gelesen haben.
   the students may the book not all read have

There are three exceptions to the rule for do-insertion in English and they are concerned with contrast, topicalisation, and sentence-initial negated subjects. See the appendix to this chapter for examples.
e. ?/*Die Studenten mögen ein Buch nicht alle gelesen haben.
  the students may a book not all read have

f. *Die Studenten mögen das Buch gelesen nicht alle haben.
  the students may the book read not all have

These sentences elicit exactly the same grammaticality judgements as their non-negated equivalents in the examples in (67) in Chapter 2. In the (a) sentence no stranding has taken place. The subject QP nicht alle die Studenten (not all the students) has moved intact to [SPEC, CP]. Example (b) is ungrammatical because the quantifier nicht alle and the subject DP die Studenten are both in [SPEC, CP]. It is thus not stranding that has occurred here, but simple inversion of the quantifier and the DP. In (c), as was explained in Chapter 2, the negated quantifier could be in the SPEC position of vP, PerfP or ModalP. Example (d) is the same as (c) except that the definite direct object has been scrambled to a position just below TP. I include the example in (e) only to show that indefinite direct objects, unlike definite direct objects, are generally not scrambled. It is therefore not the stranding position of nicht alle that is problematic in (e) but the scrambling of an indefinite direct object. The ungrammaticality of (f) is due to the fact that the quantifier is located to the right of the main verb. As I showed in diagram (68) in Chapter 2, nominal elements move leftward up the tree while verbal elements move rightward. It is therefore impossible for the quantifier to have gotten to the right of the verb.

The sentences in (42) are based on the sentences in (41) except that they are subordinate clauses. In the (a) sentence no stranding has occurred, in (b) the negated quantifier is stranded in [SPEC, vP], and (c) is the same as (b) except that the direct object has been scrambled around the negated quantifier:

(42) a. …dass nicht alle die Studenten das Buch gelesen haben mögen.
  that not all the students the book read have may

b. …dass die Studenten nicht alle das Buch gelesen haben mögen.
  that the students not all the book read have may

c. …dass die Studenten das Buch nicht alle gelesen haben mögen.
  that the students the book not all read have may

We also need to consider the stranding of negated quantifiers in subordinate clauses that involve an infinitivus pro participio construction. This construction is explained in detail in Chapter 2. Note the following sentences:
(43) a. *... dass die Studenten nicht alle das Buch lesen sollen hätten.
    that the students not all the book read should had

b. ... dass die Studenten nicht alle das Buch hätten lesen sollen.
    that the students not all the book had read should

c. ... dass die Studenten das Buch nicht alle hätten lesen sollen.
    that the students the book not all had read should

d. *... dass die Studenten das Buch hätten nicht alle lesen sollen.
    that the students the book had not all read should

The (a) sentence is ungrammatical because the finite verb hätten (had) has remained in its base-position instead of undergoing inversion with its complement as required in an IPP construction. In (b) the negated quantifier is stranded in [SPEC, ModalP]. The (c) example is the same as (b) except that the direct object has been scrambled around the quantifier. It can be proven that (b) and (c) contain a stranded negated quantifier by inserting a sentential (PerfP) negation marker into the sentences:

(44) a.... dass die Studenten nicht alle das Buch nicht hätten lesen sollen.
    that the students not all the book not had read should

b.... dass die Studenten das Buch nicht alle nicht hätten lesen sollen.
    that the students the book not all not had read should

Example (43d) poses an interesting question. As shown in the discussion of example (77c) in Chapter 2, many speakers accept this kind of structure if there is no negation:

(45) ?/*... dass die Studenten das Buch hätten alle lesen sollen.
    that the students the book had all read should

In Chapter 2 I offered explanations for why this sentence is accepted by some and rejected by others. The question is why it is universally rejected if the quantifier is negated, as in (43d). I do not have a convincing explanation for this, but I can offer two preliminary suggestions. If (43d) had a sentential (PerfP) negation marker, it would have to precede the auxiliary hätten (had). It might be that the constituent negation marker in (43d) is construed by the hearer as a misplaced sentential negation marker. Another possibility is that there seems to be a general problem in the Romance and Germanic languages whenever constituent negation appears lower than the position of sentential negation. This is evidenced by the fact that example (43d) can be corrected by moving the negated quantifier to a position above that of sentential negation, as in (44a) and (44b). This subject will come up again in Section 6.3 in connection with English. What I want to emphasise is that the problem with (43d) is not a problem with stranding per se, as shown in (45), but has something to do with negation.
In this sub-section we have seen that the Stranding Analysis can account for floating negated quantifiers in mono-clausal sentences, including sentences with several verbal elements. Before we go to the next section, for completeness’ sake there is one difference between German and English that requires comment. It was touched upon in Section 1.2. Note the following two German sentences:

(46) Die Mädchen lieben alle den Jungen.
    the girls love all the boy
(47) Die Mädchen lieben nicht alle den Jungen.
    the girls love not all the boy

These sentences involve the stranding of a quantifier and a negated quantifier, either in [SPEC, vP] or in [SPEC, TP]. We would expect to find the same pattern, stranding in [SPEC, vP] or [SPEC, TP], in English as well, but we don’t:

(48) The students all read the book.
(49) *The students not all read the book.

The question is why (49) is ungrammatical while its German counterpart in (47) is not. Opening a detailed discussion of this issue now would cause a major diversion from the subject at hand, but basically, the reason for this discrepancy between German and English is caused by the interaction of two phenomena—the fact that main verbs move to AgrS (and C) in German but remain in v in English, and the fact that English sometimes requires do-insertion even in cases of constituent negation, as mentioned in Section 1.2. The interested reader is referred to the appendix to this chapter for a more detailed explanation.

We will now look at negated floating quantifiers in raising constructions.

### 2.2 Negated Quantifiers in Raising Constructions

Given that the Romance languages do not allow the stranding of negated quantifiers, if one assumes that raising involves the movement of a subject from a lower clause to the main clause, the Stranding Analysis predicts that one will find stranded negated quantifiers in raising constructions in the Germanic languages but not in the Romance languages. The following sentences from English, German and Italian show that this prediction is borne out:

(50) a. The students seem [not all to have enjoyed the film].
    b. The students seem [to not all have enjoyed the film].
    c. The students seem [to have not all enjoyed the film].
(51)  a. …dass die Studenten [nicht alle den Film genossen zu haben] scheinen.
    that the students not all the film enjoyed to have seem

b. …dass die Studenten [den Film nicht alle genossen zu haben] scheinen.
    that the students the film not all enjoyed to have seem

(52)  a. *Gli studenti sembrano [aver non tutti apprezzato la pellicola].
    the students seem to have not all enjoyed the film.

b. *Gli studenti sembrano [aver apprezzato non tutti la pellicola].
    the students seem to have enjoyed not all the film.

Regarding the English examples, in the (a) sentence we see a negated quantifier stranded in [SPEC, IP] of the lower clause. In (b) and (c) a negated quantifier is again stranded in the lower clause in [SPEC, PerfP] and [SPEC, vP], respectively. In both German sentences a negated quantifier has clearly been stranded in [SPEC, vP] of the lower clause. The Italian examples become grammatical if the negation marker is simply deleted. The examples also become grammatical if constituent negation is changed to sentential (PerfP) negation:

(53)  Gli studenti sembrano [non aver tutti apprezzato la pellicola].
    the students seem not to have all enjoyed the film.

We can conclude that the Stranding Analysis is compatible with raising constructions. As already mentioned, reasons for the lack of stranded negated quantifiers in the Romance languages will be explored in Section 6 of this chapter. We will now look at the more complicated subject of control verbs.

2.3 Negated Quantifiers and Control Verbs

The reader may remember from Chapter 2 that the topic of control verbs and floating quantifiers is complicated enough without negation. Nonetheless, let’s take a look at some examples from English, German and Italian:

(54)  a. ?The students promised [not all to fail the examination].
    b. The students promised [to not all fail the examination].

(55)  a. Die Studenten versprachen, [nicht alle bei der Prüfung durchzufallen].
    the students promised not all at the test to fail

b. Die Studenten versprachen, [bei der Prüfung nicht alle durchzufallen].
    the students promised at the test not all to fail

(56)  *Gli studenti hanno promesso [di essere non tutti bocciati all’esame].
    the students have promised to be not all failed at the exam
As I discussed in Chapter 2, there are two general ways to approach control verbs. One is to follow Boeckx et alii (2003 and 2007) and say that control verbs involve movement in the same way that raising verbs do. If this approach is correct, examples (54) to (56) can be explained by saying that a negated quantifier has been stranded in the English and German examples and that the Italian example is ungrammatical because, as will be explained in section 6, the Romance languages disallow the stranding of negated quantifiers.

Another way to approach control verbs is to follow the traditional approach whereby there is no movement of the subject. In order to explain how quantifiers come to appear in the lower clause one can either follow Sportiche (1988) and say that a universal quantifier can select PRO or one can follow the suggestion that I made in the last chapter, namely, that a universal quantifier can substitute for PRO. Under these approaches, one would say that in (54a) the negated quantifier not all is in [SPEC, IP] and in (54b) it is in [SPEC, vP]. The fact that (54a) is somewhat downgraded with respect to (54b) can be explained by arguing that the quantifier has moved from one non-case position to another and this unnecessary movement causes downgrading. In the German sentences in (55) the negated quantifier nicht alle has remained in its base-position in [SPEC, vP].

The reason for the ungrammaticality of the Italian sentence in (56) will become clear in Section 6. It has to do with the fact that negation markers in the Romance languages, unlike in the Germanic languages, are not specifiers and cannot be found in [SPEC, QP], which is where the negation marker non would have to be in (56).

We can conclude that the Stranding Analysis is not incompatible with the data on control verbs. We now look at negated quantifiers and A-bar movement.

2.4 Negated Quantifier Stranding and A-bar Movement

Since in the Romance languages universal quantifiers do not select wh-words and there is no stranding of negated quantifiers in general, in this sub-section I will be concerned with questions and relative clauses in the Germanic languages. The reader is reminded that when a wh-word and a quantifier co-occur, there is a QP in which Q has selected a wh-word or phrase that must move to [SPEC, QP] before beginning its journey to [SPEC, CP]. The reader is referred to Chapter 2, Section 7.3 for details. We begin with the following German sentences from example (105) in Chapter 2:
If a sentential (PerfP) negation marker is inserted into these sentences, they retain their grammaticality:

(58)  a. ?Welche Studenten alle sind nicht gekommen?
which students all are not come?

b. Welche Studenten sind alle nicht gekommen?
which students are all not come

c. ?Welche Studenten alle hast du nicht gesehen?
which students all have you not seen

d. Welche Studenten hast du alle nicht gesehen?
which students have you all not seen

However, if the quantifier is negated, the sentences become unacceptable:

(59)  a. *Welche Studenten nicht alle sind gekommen?
which students not all are come?

b. *Welche Studenten sind nicht alle gekommen?
which students are not all come

c. *Welche Studenten nicht alle hast du gesehen?
which students not all have you seen

d. *Welche Studenten hast du nicht alle gesehen?
which students have you not all seen

A syntactic model based on the Stranding Analysis generates the interrogative sentences in (59). I believe that the sentences are in fact syntactically well formed, but if one analyses them semantically, it is difficult to imagine what they might actually mean and how one would even answer the questions that they are stating. This can be seen by comparing, for example, (57a), (58a) and (59a). Imagine that there are six students named Peter, Paul, Mary, David, Stephen and Robert, and
imagine that Peter, Paul and Mary came to a party but David, Stephen and Robert did not. Based on this information, it is easy to answer the questions in (57a) and (58a). The answer to (57a) is “Peter, Paul and Mary” and the answer to (58a) is “David, Stephen and Robert.” It is difficult to imagine what a possible answer to (59a) might be. I conclude that one cannot necessarily attribute the unacceptability of the sentences in (59) to syntactic ill-formedness, and that there is no evidence here that the Stranding Analysis makes incorrect syntactic predictions, especially since the sentences in (59) without negation are grammatical. I will move now to a brief discussion of relative clauses.

It was shown in Chapter 2 that universal quantifiers do not combine well with restrictive relative clauses for semantic reasons but that non-restrictive relative clauses and universal quantifiers can combine felicitously. Based on this, one would expect that German and English would allow the stranding of negated quantifiers in a non-restrictive relative clause. One would not expect this of Italian, given that the Romance languages do not allow the stranding of negated quantifiers. The following data from English, German and Italian confirm this:

(60) a. I spoke to the students, who had not all seen the film
    b. Ich sprach mit den Studenten, die den Film nicht alle gesehen hatten.
    c. Ho parlato con gli studenti, che avevano veduto non tutti il film.

In this sub-section we have seen that the Stranding Analysis is not incompatible with negated floating quantifiers in cases of A-bar movement. We will now take a look at negated quantifier stranding in Small Clauses.

2.5 Negated Quantifier Stranding and Small Clauses

It was shown in Chapter 2 that quantifier stranding in Small Clauses is possible, as predicted by the Stranding Analysis. The following data from English and German show that the same holds true for negated quantifiers in Small Clauses:

(61) a. I consider [not all the students intelligent].
    b. I consider [the students not all intelligent].

(62) a. Ich finde [nicht alle die Studenten intelligent].
    b. Ich finde [die Studenten nicht alle intelligent].
If one assumes that these sentences contain Small Clauses, the English examples tell us something very interesting. As will be discussed later in this chapter, English does not allow negated object quantifiers, stranded or not:

(63) a. *The student read not all the books.
   b. *The student read the books not all.

The sentences in (61) show that Small Clause subjects are truly the subjects of a Small Clause rather than objects of the matrix verb. If they were objects, they would not be able to appear in negated form. The sentences in (61) also show us that Small Clause subjects move into the higher clause, perhaps for Case, and in so doing can strand a negated quantifier. We can conclude that the Stranding Analysis accounts very well for Small Clauses. Note that if one tried to account for the lower clause in the sentences in (61) as a complex predicate rather than a Small Clause, it would be very difficult to explain the negated direct object. These sentences thus provide, I believe, evidence in favour of the claim that Small Clauses are indeed separate clauses and not complex predicates. Nonetheless, even if one prefers to analyse the sentences in (61) as containing complex predicates, the data can be accounted for under the Stranding Analysis. The object DP the students could be moving from its base-position in [SPEC, VP] to [SPEC, AgrOP] and stranding the negated quantifier.

2.6 Negated Quantifier Stranding and Remnant Movement

In Chapter 2 we saw that the Stranding Analysis makes the right predictions regarding floating quantifiers and remnant movement in German. The question is whether the same holds true if those quantifiers are negated. Note the following sentences:

(64) a. ?/*Nicht alle die Bücher lesen können wird er.
    not all the books to read to be able will he
   
   b. *Nicht alle die Bücher lesen wird er können.
    not all the books to read will he to be able
   
   c. Lesen können wird er nicht alle die Bücher.
    to read to be able will he not all the books
   
   d. *Die Bücher lesen können wird er nicht alle.
    the books to read to be able will he not all

The non-negated versions of these sentences can be found in Chapter 2, example (124). Without negation, (64a), (64b) and (64c) are deemed grammatical while (64d) is not. Example (64b) is thus the only one that really differs from its non-negated counterpart. We will analyse each individual sentence. The diagram in (65), which is the base-structure of the examples in (64), will help the reader follow the discussion.
In (64a) the entire ModalP headed by können (to be able) has been topicalised and moved to [SPEC, CP]. The subject pronoun er (he) has moved to subject position and is no longer in vP or ModalP. The diagram in (65) will help the reader visualise this. The sentence should theoretically be grammatical. If one thinks about the semantics of this sentence, one comes to the realisation that it is nonsensical. This might be what causes it to be downgraded with respect to its non-negated counterpart. The focus is on the future modal verb wird (will) and the rest of the sentence, the ModalP headed by können (to be able), is topicalised. The sentence answers the question “What will the student do?” by stating, “What he will do is be able to read less than all of the books.” This is an absurd reply because the ability not to read an entire set of books is a property of all human beings a priori. Example (64b), which should theoretically also be grammatical, seems to be semantically at least as nonsensical as (64a). In (64b) the entire vP headed by lesen (to read) has been topicalised. Again, the subject pronoun er (he) has moved to subject position and is no longer in vP. This sentence answers the question “What will the student be able to do?” by stating, “What he will be able to do is to read less than all of the books.”

(65) ModalP
   | SPEC Modal’
   |   | ModalP Modal wird
   |   | SPEC Modal’ (will)
   |   | vP Modal können
   | SPEC er (he) AgrOP v lesen
   | SPEC QP AgrO’ (read)
   | SPEC QP VP AgrO
   | SPEC QP Q’
   | SPEC QP nicht (not) alle die Bücher (all) (the books)
since the versions of these sentences without negation are grammatical, we know that the problem is not caused by the topicalisation of the ModalP in (64a) and the vP in (64b). Secondly, as we saw in Section 1.1, there is in principle nothing wrong with topicalising a negated constituent. It would therefore seem that semantics rather than syntax is at the root of the judgements of (64a) and (64b). The problem with this line of reasoning is that it is well known that nonsensical semantics does not necessarily cause syntactic unacceptability. Note that (64a) and (64b) do not actually involve the topicalisation of a negated constituent, but rather the topicalisation of a phrase that contains a negated constituent. It may be that a phrase that contains a negated constituent simply does not lend itself to topicalisation. I will have to leave this for future research.

In (64c), the definite direct object QP nicht alle die Bücher (not all the books) has been scrambled and the entire remnant ModalP headed by können (to be able) has been topicalised. This sentence is not semantically absurd because it topicalises the verbal elements without the object negated QP. It therefore makes the statement, “It is not true for all the books that the student will be able to read them.”

The ungrammatical (64d) is the most important sentence in this group because it is not semantically absurd but is nonetheless very downgraded by nearly all speakers. This sentence makes the statement, “As far as the student’s ability to read books is concerned, it does not apply to all of the books.” The question is whether (64d) is evidence against the Stranding Analysis of floating quantifiers. In other words, does the Stranding Analysis predict that a quantifier can appear in the position that it occupies in (64d)? Note that the topicalised segment in this sentence is die Bücher lesen können (the books, to read, to be able). By looking at (65) the reader can see that it is impossible to topicalise die Bücher lesen können without moving the negated quantifier as well. It is therefore impossible for the negated quantifier in (64d) to have gotten into its position within the framework of the model that I am working with. In order for the negated quantifier to be stranded, the DP die Bücher (the books) would have to be scrambled out of QP first. This would mean moving the DP out of vP and up to a position above ModalP. This is not what is happening in (64d), where the DP die Bücher is adjacent to the main verb and has therefore not been scrambled out of vP. The Stranding Analysis thus again makes the right predictions about how remnant movement affects floating quantifiers.

2.7 Section Summary

In this section we have looked at negated floating quantifiers in a variety of different sentential and phrasal structures. The data presented have been shown to be compatible with the Stranding Analysis. The rest of this chapter will be devoted to interesting issues in the study of negated floating quantifiers, including inverse scope readings in the Germanic languages and the fact that negated quantifiers cannot be stranded in the Romance languages.
3. Accounting for Ambiguity in West Germanic—the Neg Stranding Hypothesis

3.0 Introduction

We come now to one of the central issues of this chapter, and that is the question of how the inverse scope reading of the following sentence is made possible:

(66) All the students have not read the book.

The ambiguity of this sentence becomes clear if the reader imagines the following two situations:

Mr. Mayer teaches a literature class of twenty students. He assigns the novel *Das Glasperlenspiel* to his class and says that it must be read by the end of the month. At the end of the month he is sad to discover that no one in the class has read the novel. He sees the school principal, Sister Mary Elephant, at lunchtime, and the following conversation takes place:

“Mr. Mayer, you look rather down today. Is something the matter?”

“As a matter of fact, Sister Mary Elephant, I am very disappointed because my students have not read the book that I assigned to them.”

“Oh, really? Which students have not read the book?”

“All the students have not read the book.”

In this version of (66) the quantifier *all* takes scope over the negation marker, producing a \[\forall > \neg\] reading. This scopal relationship reflects Surface Structure word order and its derivation is straightforward. Now, imagine the following situation:

Mr. Mayer assigns the novel *Letters from the Earth* to his literature class and is certain that all twenty students have read it. In reality, however, two of the students, Rocky and Joseph, have not. The school principal, Sister Mary Elephant, happens to know this. Mr. Mayer sees the principal at lunchtime, and the following conversation takes place:

“Mr. Mayer, you look rather happy today. Has something pleasant happened?”

“As a matter of fact, Sister Mary Elephant, I am very happy because all my students have read the book that I assigned to them.”

“Mr. Mayer, I really hate to ruin your good mood, but there is something that I must tell you. All the students have *not* read the book.”
In this version of (66) the negation marker takes scope over the quantifier *all*, producing a \([\neg > \forall]\) or constituent negation reading. Since the scopal relationship in this reading contradicts the Surface Structure word order, it is referred to as an inverse scope reading. The inverse scope reading of (66) has the same meaning as the following unambiguous sentence, in which I have argued that *not all* is a constituent, that is, a negated quantifier:

(67) Not all the students have read the book.

The fact that (66) can mean the same as (67) strongly suggests that under the inverse scope or \([\neg > \forall]\) reading of (66) the words *not* and *all* must have formed some kind of constituent at some point in the derivation, as in (67). The question of how this constituent has become split is the subject of the next two sections of this chapter. I will argue that just as a quantifier and a negated quantifier can be stranded by a DP, so can a negation marker be stranded by a QP or any other maximal projection. This hypothesis, which I refer to as the Neg Stranding Hypothesis, is the main subject of this section. I have divided the section into two sub-sections. In Section 3.1 I present the Neg Stranding Hypothesis and show why it is needed and how it works. In Section 3.2 I present some issues with Neg Stranding but argue that they do not undermine the hypothesis.

3.1 The Neg Stranding Hypothesis

We will begin by immediately looking at some data. The following German sentence allows an inverse scope reading:

(68) Alle die Mädchen lieben den Jungen nicht.

This sentence can have a \([\forall > \neg]\) or a \([\neg > \forall]\) reading. Normally, a \([\forall > \neg]\) reading is associated with primary stress on the quantifier while a \([\neg > \forall]\) reading is associated with primary stress on the negation marker. Obviously, with different combinations and permutations of primary, secondary and tertiary stress, not only on the quantifier and the negation marker but also on the subject DP, the object DP and the verb, many different readings and nuances are possible in a sentence like this. My assumption is that phonological stress follows from but does not determine syntactic scope. The point of this exercise is therefore to provide a syntactic explanation for why inverse scope is possible in sentences such as (68). The reading \([\forall > \neg]\) reflects the Surface Structure and its derivation is straightforward. I assume, following Zeijlstra (2004), that it is derived from a base-structure in which the negation marker is in the SPEC position of a finite vP, creating sentential negation, as shown in (70). I will be concerned here with the \([\neg > \forall]\) or inverse scope reading, which I assume stems from the fact that the negation marker and the quantifier form a constituent, a negated quantifier, at some point in the derivation. As mentioned in Section 3 of Chapter 1 and in the introduction to this chapter, and as I will explain in Section 6 of this chapter, I extend the theory of sentential negation in Zeijlstra...
(2004) to constituent negation and assume the base-structure in (69) for negated quantifiers. The reader is also reminded that I assume the phrasal hierarchy in (71).

(69)```
QP
  \[
  \text{SPEC} \\
  \text{nicht} \quad \text{QP}
  \]
  \[
  \text{SPEC} \\
  \quad \text{Q'}
  \]
  \[
  \quad \text{Q}
  \]
  \[
  \text{DP}
  \]
  \[
  \text{alle die Mädchen} \\
  \quad \text{(all the girls)}
  \]
```

(70)```
PerfP
  \[
  \text{SPEC} \\
  \text{nicht} \quad \text{Perf'}
  \]
  \[
  \text{SPEC} \\
  \quad \text{Perf}
  \]
  \[
  \text{vP}
  \]
  \[
  \text{SPEC}
  \]
  \[
  \text{QP}
  \]
  \[
  \text{v'}
  \]
  \[
  \text{v}
  \]
  \[
  \text{alle die Mädchen} \\
  \quad \text{(all the girls)}
  \]
```

(71)```
CP
  \[
  \text{AgrSP}
  \]
  \[
  \text{TP}
  \]
  \[
  \text{vP}
  \]
  \[
  \text{AgrOP}
  \]
  \[
  \text{VP}
  \]
```

Let’s now consider how to derive the inverse scope reading of (68). The lower QP node in (69) simply moves up to subject position, stranding the negation marker in QP. This produces the following structure:
The direct object *den Jungen (the boy)* is then scrambled to a position below TP, leaving the negation marker in sentence-final position. After the negation marker has been stranded, the question arises as to how the pre-stranding scopal relations are preserved. In other words, after Neg Stranding takes place, how is a [\( \forall > \neg \)] reading avoided and a [\( \neg > \forall \)] reading maintained? The lack of a sentential negation reading is not difficult to explain. The stranded negation marker in (72) does not c-command vP and should not be able to take scope over it. In fact, negation does not c-command the verb at any point in the derivation. Sentential negation should therefore be ruled out in this case. The more difficult question is the [\( \neg > \forall \)] reading, because the subject QP, including the quantifier, has moved above the stranded negation marker.

I would like to suggest that the stranded negation marker in (72) retains scope over the quantifier because of a unique relationship that it has with that quantifier. Note that in (69) and (72) the stranded negation marker has a symmetric c-command (sister) relationship with the lowest trace of the moved subject QP. This seems to make the negation marker a part of the entire A-chain of the moved constituent. I would like to propose that by virtue of this relationship the stranded negation marker retains scope over the entire chain of that moved QP and that this is what preserves the negated constituent interpretation. One could say that this proposal is purely intuitive and based only on a simple observation, but note that it can be applied to other stranded element as well. For example, a stranded quantifier also symmetrically c-commands the lowest trace of the DP that strands it and retains scope over the entire chain of that DP. A stranded preposition also has this structural relationship to the nominal element that strands it. There is another reason why I think that the symmetric c-command relationship between the negation marker and the subject QP is significant, which I will now explain.

The reader will note that in a structure like (70) a subject QP will move across negation to subject position. The reading is [\( \forall > \neg \)]. Even though the QP is above negation at this point, the negation marker still c-commands the trace of the moved subject QP just as it does in (69). Why, then, is no [\( \neg > \forall \)] reading available in (70) although it is in (69)? What is the difference between the two structures? I propose that the difference is that the negation marker in (70) has no sister relationship with
the lowest trace of the moved subject QP and could not be said to be a part of the entire A-chain of that QP. It can therefore not be expected to have the same scopal effects as the negation marker in (69). Thus, when the QP in (70) moves to subject position, it will outscope negation. There will be more on this mutual c-command relationship in Section 3.2.1, but I take it to be the most plausible explanation for the inverse scope reading in a structure like (72).

For further evidence of the stranding of the negation marker, I would like to return to sentence (19), repeated here:

(73) Nicht den Hund hat er gefüttert, sondern die Katze.
not the dog has he fed but the cat

It was demonstrated in the above discussion that this sentence is an instance of constituent negation. The DP *den Hund* (*the dog*) is negated in order to contrast it with the other DP, *die Katze* (*the cat*). Neg Stranding can also take place in (73):

(74) Den Hund hat er nicht gefüttert, sondern die Katze.
the dog has he not fed but the cat

The interesting thing about this sentence is that it does not contain a negated quantifier phrase, but a negated DP. What this shows is that in German the negation marker can be stranded not only in cases of quantifier movement but also in the case of the topicalisation of a normal DP. QP and DP are not the only phrases that can strand a negation marker. PP and vP can also be involved in Neg Stranding:

not on the sofa has he slept but on the floor

b. Auf dem Sofa hat er nicht geschlafen, sondern auf dem Boden.
on the sofa has he not slept but on the floor

c. Auf dem Sofa hat er nicht geschlafen.
on the sofa has he not slept

In the (a) sentence, a negated PP has been topicalised and contrasted with another PP. This is clearly a negated constituent rather than sentential negation. Example (b) is the same as (a) except that the negation marker has been stranded. The (c) example is a truncated version of (b), still with a negated constituent reading. In the following three sentences we see exactly the same phenomenon with a vP instead of a PP.8

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8 There are two ways to tell that (76a) and consequently (76b) and (76c) as well are instances of constituent rather than sentential negation. First of all, if (76a) were a case of sentential negation, the negation marker would follow the finite auxiliary verb *hat* (*has*). Secondly, the *not...but* contrastive construction co-ordinates only past participles, not whole sentences.
If the Neg Stranding Hypothesis is correct and true stranding is taking place, the prediction is that a stranded negation marker should be able to be found in positions between the base position and final landing site of a negated QP. This prediction is borne out. In the examples in (77), a negated quantifier is stranded. In the examples in (78), a \([-\forall > \forall]\) reading is available, meaning that Neg Stranding has occurred:

(77) a. The doctors might have been not all examining the patient.
    b. The doctors might have not all been examining the patient.
    c. The doctors might not all have been examining the patient.

(78) a. All the doctors might have been not examining the patient.
    b. All the doctors might have not been examining the patient.
    c. All the doctors might not have been examining the patient.

The Neg Stranding Hypothesis has the advantage of explaining ambiguity by positing two different base-structures for two different meanings and it is supported by empirical evidence such as the data in examples (73) to (78). I would like now to discuss some special challenges to Neg Stranding.9

3.2 Issues with Neg Stranding

3.2.0 Introduction

This sub-section will deal with five special issues that emerge from the Neg Stranding Hypothesis. A numbered sub-section, 3.2.1 to 3.2.5, is devoted to each issue, followed by a brief recapitulation in Section 3.2.6. I will attempt to show that none of the issues poses a real threat to Neg Stranding.

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9 I first developed the Neg Stranding Hypothesis in 2005. Three years later I heard about an article by Tilman Höhle, written in 1991, in which it is suggested that inverse scope can arise when a negation marker c-commands the trace of a moved quantifier. This is not exactly the same as Neg Stranding, but the similarity between Höhle’s approach and mine is striking and has to be mentioned. Christopher Columbus had never heard of Leif Ericson, but Ericson found America first.
3.2.1 The Reconstruction Issue

The purpose of the Neg Stranding Hypothesis is to explain ambiguity, and it does this by positing two different structures, as seen in (69) and (70), for the two readings of sentences like (68), repeated here:

(68) Alle die Mädchen lieben den Jungen nicht.
    all the girls love the boy not

It is not the intention of Neg Stranding to rely on other forms of disambiguation such as reconstruction. However, if one follows the copy theory of movement in Chomsky (1995) one might argue that Neg Stranding implicitly involves reconstruction. In a sentence like (68), the subject QP moves out of its base-position in vP and leaves a trace. Under the copy theory of movement, this trace is actually a lower copy of the moved subject. The \([- \rightarrow \forall]\) reading of (68) could therefore be said to come from interpreting this lower copy, which is under the scope of the negation marker inside QP, as illustrated in (69) and (72). Under the copy theory of movement one could just as easily interpret the higher copy of the subject-QP in (68), thereby obtaining a reading of \([\forall \rightarrow -\!]\). This implies that reconstruction is optional and that it offers a way of resolving ambiguity. It even implies that the Neg Stranding Hypothesis is not needed to explain ambiguity. It is important to point out that sentences like (68) involve A-movement. There is widespread agreement in the literature on the need for reconstruction under A-bar movement, but reconstruction under A-movement is controversial. Many, such as Lasnik (1998), doubt that it occurs at all. The majority of the references to reconstruction under A-movement in the literature are made in connection with anaphora that precede their binding antecedents in the Surface Structure. The following is a quote from Barss (2001):

“In general, we will observe reconstruction effects under A-movement only in cases where there is an argument NP (the potential antecedent) which c-commands the deep position but not the surface position of the raised NP which contains an anaphor.”

It would seem, then, that reconstruction under A-movement has two possible functions. One would be to explain anaphor binding issues as claimed by Barss and the other would be to resolve ambiguity within the framework of the copy theory of movement as discussed in the preceding paragraphs. In this sub-section I will share with the reader my reasons for being skeptical about the usefulness of reconstruction under A-movement, both in explaining anaphor binding and in disambiguation, and I will claim that in fact Neg Stranding need not be analysed as involving A-movement reconstruction. In the next sub-section I will demonstrate that the Neg Stranding Hypothesis is needed whether one believes in A-movement reconstruction.

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or not. I begin by showing the problems with using A-movement reconstruction to resolve anaphor binding issues.

Belletti and Rizzi (1988) claim that A-movement reconstruction can in some instances explain why an anaphor can precede its antecedent in the Surface Structure. Consider the following Italian and English sentences:

(79)  

(a) Questi pettegolezzi su di sé preoccupano Gianni
these gossipings about himself worry Johnny
più di ogni altra cosa.
more than every other thing

(b) These stories about himself worry John more than anything else.

In these sentences, an anaphor precedes its antecedent without rendering the sentences ungrammatical. Reconstruction supposedly saves the sentences. The reader will notice, however, that under normal circumstances reconstruction would not help (79a) and (79b), because even after the anaphora return to their base-positions, given that they are embedded in a subject, they will still precede their supposed antecedents, which are objects. Belletti and Rizzi attempt to get around this problem by treating verbs like *worry* as a special kind of unaccusative and positing a special base-structure for sentences that contain them. They support treating verbs like *worry* as unaccusatives by arguing that normal transitive verbs do not show the same results as (79a) and (79b):

(80)  

(a) *Questi pettegolezzi su di sé descrivono Gianni meglio
these gossipings about himself describe Johnny better
di ogni biografia ufficiale.
than every biography official

(b) *These stories about himself describe John better than any official biography.

Based on this discrepancy between verbs like *worry* and verbs like *describe*, Belletti and Rizzi posit the following base-structure for sentences like those in (79):
Under this scenario, the antecedent John c-commands the base-position of the anaphor and reconstruction restores the proper binding relationship. There are, I believe, issues with this analysis. First of all, I question the judgements in (79) and (80). I do not believe that the sentences in (79) sound that much worse than those in (80), which suggests that worry verbs are not necessarily a special form of unaccusative but are normal transitive verbs. Secondly, if one assumes that adjacency (a specifier or complement relationship) is required for 0-role assignment, the structure in (81) cannot explain how the experiencer John receives a 0-role. Thirdly, why would John not be able to move into the empty subject-position just as easily as these stories about himself? Belletti and Rizzi say it is because of the “lexical case” assigned by the idiosyncratic unaccusative worry. But this claim has two problems. It does not explain why the position of John in (81) is a case position at all, and it does not explain why John can be passivised in English and Italian:

(82) John is worried by those stories.

(83) Gianni è preoccupato dai pettegolezzi.

Johnny is worried by the gossip

The fact that passivisation takes place here strongly suggests that there is no lexical case involved at all in (79) but the normal accusative case that one would expect from a normal transitive verb. Given the questions surrounding the analysis in (81), one must question its validity, and if it is invalid, reconstruction is shown to be unreliable in resolving anaphor binding issues. There must be another explanation for the grammaticality of the sentences in (79), which I find to be marginal anyway. We will now look at how reliable (or unreliable) A-movement reconstruction is in resolving ambiguity.

Consider the analysis of Fox (1999), who treats A-movement reconstruction (referred to as scope reconstruction or quantifier lowering) as a means of resolving ambiguity. Consider the following example:

(84) [Someone from New York] is very likely to win the lottery.

According to Fox’s analysis, if no reconstruction takes place in this sentence, the quantifier *someone* takes scope over the raising verb *to be likely* and the meaning is that a specific person in New York who has presumably bought a lot of lottery tickets is probably going to win the lottery. If reconstruction does take place, the raising verb *to be likely* takes scope over *someone* and the meaning is that it is probable that a non-specific person from New York will win the lottery, perhaps because more lottery tickets were sold in New York than in any other city. The question is whether this analysis could be used to explain the type of ambiguity that I am trying to explain, exemplified in (66), repeated here:

(85) All the students have not read the book.

There are a number of reasons why I question the appropriateness of applying Fox’s analysis of (84) to a sentence such as (85). I will ignore the fact that nearly all of Fox’s examples involve raising verbs and that none of them involve negation or the quantifier *all*, which already casts doubt on the applicability of Fox’s analysis to (85). There are other reasons for not adopting Fox’s analysis for sentences like (85). First of all, under an approach like Fox’s, reconstruction is basically an optional LF operation that undoes the effects of raising. But raising is also optional at the Surface Structure. Both of the following sentences are possible:

(86) a. Someone from New York is very likely to win the lottery.
   b. It is very likely that someone from New York will win the lottery.

If an operation is not obligatory, it does not seem very economical to optionally raise an element at the Surface Structure and then optionally lower it again at LF. This is one problem with Fox’s analysis. An even bigger problem is the fact that quantifier lowering or reconstruction in (84) does not disambiguate at the Surface Structure. The two sentences in (86), which are based on (84) with and without raising, are both ambiguous. If reconstruction does not disambiguate at the Surface Structure it is not clear how it would be any more effective at LF. This should cast considerable doubt on whether reconstruction at LF is really the way to disambiguate a sentence, whether it be one of the sentences in (86) or example (85). The cause of the ambiguity of the sentences in (86) has nothing to do with syntactic structure but with the specificity or non-specificity of the quantifier *someone*.

Moving away from Fox’s analysis, I would like to present some additional evidence that A-movement reconstruction is of questionable use in matters of ambiguity. Consider the following ambiguous sentence:

(87) Everybody loves someone.

Under the reading in which *everybody* takes scope over *someone*, quantifier raising is unnecessary, since *everybody* outscopes *someone* by virtue of its higher position. If the quantifier *everybody* is raised at LF even though raising is unnecessary, reconstruction is also unnecessary and is therefore irrelevant with or without
quantifier raising. Consider now the reading of (87) in which someone takes scope over everybody. In order to get this reading, someone has to undergo quantifier raising at LF. Reconstruction in this instance would undo the effect of quantifier raising and produce an undesired reading. In other words, regardless of how one interprets (87), reconstruction is inappropriate and not a suitable way to resolve ambiguity.

The following example from Sportiche (2005) illustrates that there are situations in which reconstructing creates ambiguity rather than resolving it:

(88) Everyone seems not to be listening.

This sentence has only a \([\forall > \neg]\) reading. A reconstructed version of this sentence, without raising, is ambiguous for a \([\neg > \forall]\) and a \([\forall > \neg]\) reading:

(89) It seems that everyone is not listening.

One last problem that I must point out with A-movement reconstruction is that it is not permitted in the Romance languages when negation is involved. The following Italian sentence allows only a \([\forall > \neg]\) reading:

(90) Tutti gli studenti non hanno letto il libro.

Following Zeijlstra (2004), I assume the following base-structure for this sentence:

(91) 

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12 Sportiche (2005) p. 34.
If reconstruction (interpretation of the lower copy of the subject QP) were possible in this sentence, a \([- \rightarrow \forall]\) reading would be possible, but such a reading is unavailable. One could argue that the intervening NegP has something to do with the inability to reconstruct in this sentence, but it is not at all clear why this should be so, especially since reconstruction in a sentence like (85) (*All the students have not read the book*) also involves an intervening negation marker. Could the difference be that in the Romance languages the intervening negation marker is a head, as seen in (91), while the negation marker in (85) is a specifier in QP? Perhaps, but once again we would have to ask ourselves why this should be the case. If a QP in a sentence like (91) can move above negation into subject position, why can it not move back to its base-position again under reconstruction?

To summarise, not only is A-movement reconstruction a doubtful means of explaining anaphor binding issues, but it is not a convincing means of disambiguating. It poses economy issues, it sometimes fails to resolve ambiguity, it sometimes creates ambiguity, and it is sometimes not permitted at all. It is no surprise that it is not universally accepted. Nonetheless, something like reconstruction seems to be needed in order to produce an inverse scope reading in a sentence like (85). This puts me in a dilemma and leaves me with two options, both of which have a weakness:

**Option 1:** Whether reconstruction (the interpretation of a lower copy of a syntactic element) is consistently effective or not, the option is available under the copy theory of movement, and one could therefore assume that reconstruction is what allows the inverse scope reading in a sentence like (85). Regarding the Romance languages and the inability to reconstruct and obtain an inverse scope reading in a sentence like (90), one would have to assume, for a reason that is not yet understood, that reconstruction under A-movement is not possible across NegP. The need for an assumption that is not understood is a flaw and makes this option unattractive.

**Option 2:** The second option would be to say that the inverse scope reading in (85) is made possible not by reconstruction but by the fact that a negation marker stranded in a structure such as (72) is part of the A-chain of a moved QP and c-commands the lowest trace of that moved QP, which allows it to take scope over all the elements in the chain of the moved constituent without reconstruction. In spite of the issues that this option creates for the copy theory of movement it appears to make the most sense intuitively and it avoids having to depend on something as questionable as reconstruction under A-movement and on stipulations such as the one that disallows reconstruction over NegP in the Romance languages. I will therefore assume that in Neg Stranding there is no reconstruction per se but that a negation marker which is located inside an A-chain and which c-commands the lowest trace in that chain retains its scope over the elements in that chain without reconstruction.

Besides reconstruction, there are other issues with Neg Stranding to discuss.
3.2.2 Superfluousness of Neg Stranding under A-Movement Reconstruction

This issue is actually a continuation of the reconstruction issue posed in Section 3.2.1, where I presented two options for dealing with reconstruction under A-movement. Those who prefer Option 1, whereby A-movement reconstruction may be used to resolve ambiguity, may argue that if we can derive an inverse scope reading by simply interpreting a lower copy of a constituent, we may not need the Neg Stranding Hypothesis at all. Even though I am assuming Option 2 rather than Option 1, just for the sake of argument I will pursue this challenge. Consider the following to be the base-structure of both readings of (85):

(92) PerfP
    SPEC not Spec PerfP
    SPEC Perf have vP
    SPEC v’
    QP read the book
    all the Students

This base-structure has only a sentential negation marker. When the subject QP moves to canonical subject position in [SPEC, AgrSP] and the auxiliary verb moves to AgrS, the following word order is produced:

(93) All the students have not read the book.

In order to obtain the [∀ > ¬] reading, one could interpret the higher copy of the subject QP. For the [¬ > ∀] reading the lower copy would be interpreted. The ambiguity of the sentence could in this way be accounted for without Neg Stranding, since the lower copy of the subject QP is c-commanded by the negation marker. Despite this possibility, even if one accepts Option 1 there are three reasons why the Neg Stranding hypothesis is still necessary, which I will now present.

First Argument for Neg Stranding: Sentential Negation and Stranded Constituent Negation Co-occur

There are sentences in which Neg Stranding (the stranding of a negation marker inside QP) co-occurs with a sentential negation marker. Consider the following pairs of Dutch, German and English sentences:
These sentences contain both a stranded negated quantifier and sentential negation. Let’s see what happens in these sentences when the negation marker is stranded, without the quantifier:

(97)  a. Al de studenten zijn niet niet gekomen.
     all the students are not not come

b. Al de studenten komen niet niet.
     all the students come not not

(98)  a. Alle die Studenten sind nicht nicht gekommen.
     all the students are not not come

b. Alle die Studenten kommen nicht nicht.
     all the students come not not

(99)  a. All the students have not not come.
     b. All the students are not not coming.

Those speakers who bother to try to parse these sentences have a strong tendency to get only a reading in which both negation markers are sentential and thus cancel each other out and produce the meaning that all students have come or are coming. The translation of this reading into predicate logic would be $\forall x (Sx \rightarrow \neg Cx)$. Nonetheless, some speakers of all three languages report that a second reading is also possible, with the meanings of (94) to (96). This reading would be translated into predicate logic as $\neg \forall x (Sx \rightarrow \neg Cx)$.

Given that under the first reading of (97) to (99) the two negation markers cancel each other out, it is indeed logical to assume that they are both sentential negation markers and that this reading has the following base-structure:
It is clear that one could not get an inverse scope reading in this sentence by interpreting the lower copy of the subject QP, because the two sentential negation markers would continue to cancel each other out. The way to get the inverse scope reading would be to assume both quantifier negation and sentential negation, as illustrated in the following diagram:

Since the structure in (100) cannot produce an inverse scope reading for (97) to (99), the structure in (101) and hence the Neg Stranding Hypothesis are necessary.

Second Argument for Neg Stranding: Inverse Scope in the Absence of Sentential Negation

The second reason that I will present for claiming that Neg Stranding is not superfluous is the fact that there are instances of inverse scope in which there is constituent negation but no sentential negation. Consider again the following German sentences from Section 1.2:

(102)  a. Nicht den Hund hat er gefüttert, sondern die Katze.
       not the dog has he fed but the cat

       b. Den Hund hat er nicht gefüttert, sondern die Katze.
           the dog has he not fed but the cat

In the (a) sentence we know that the negation marker is not sentential because it has been fronted with its associated DP in a topicalisation process and does not follow the finite auxiliary verb hat (has). In the (b) sentence we also know that the negation marker is not sentential. We know this not only because the (b) sentence means the same as the (a) sentence, but because in both sentences we have a not...but construction and, as I demonstrated in Section 1.2, only like categories can be contrasted in this way. The negation marker must therefore be base-generated inside
DP in both sentences. For scopal purposes, a lower copy of the DP *den Hund* (*the dog*) in (102b) will be interpreted, but it will not be a sentential negation marker that negates the DP but a stranded constituent negation marker. Hence, the Neg Stranding Hypothesis is not superfluous by any means.

**Third Argument for Neg Stranding: Capturing Generalisations**

My third reason for arguing that Neg Stranding is not superfluous has to do with a generalisation. Consider the following three sentences, which contain exactly the same words and mean exactly the same thing:

(103) Not all the students have read the book.
(104) The students have not all read the book.
(105) All the students have not read the book. (I.e., the $\neg \forall$ reading.)

The first two of these sentences cannot be produced without the following structure:

(106)

```
  QP
 /\  
SPEC  QP
       /\  
  not  SPEC  Q`
       Q  DP
         `  all  the students
```

Example (103) could not be produced without (106) because we would otherwise not get the negation marker into sentence-initial position. Example (104) could also not be produced without the constituent negation marker in (106) because a sentential negation marker would be in the wrong place. This becomes evident if a sentential negation marker is inserted into (104):

(107) The students have not all not read the book.

If (103) and (104) are derived from the structure in (106), a major generalisation would be missed if (105) were not also derived from the same structure. The Neg Stranding Hypothesis allows us to capture this generalisation.

In Section 3.2.2 I have presented three reasons why the Neg Stranding Hypothesis, whereby a negation marker is stranded inside a QP or other phrase, is not superfluous even if one accepts A-movement reconstruction as a means of disambiguating. A sentential negation marker cannot always accomplish the same things that a stranded constituent negation marker accomplishes. And, if Neg Stranding is necessary anyway, in my opinion it does not make sense to rely on something as questionable as A-movement reconstruction to resolve ambiguity. We can now continue to look at other issues posed by the Neg Stranding Hypothesis.
3.2.3 Neg Stranding without QP and with Contraction of Not

Yet another potential issue with Neg Stranding is the ambiguity of a sentence such as the following:

(108) Everybody hasn’t read the book.

One might question the appropriateness of Neg Stranding in this instance because Neg Stranding involves constituent negation and the negation marker in this sentence has been contracted and adjoined to a verb, making it look very much like sentential negation. In point of fact, however, the universal quantifier everybody is co-occurring with a negation marker and consequently two readings are possible. The \( \forall > \neg \) reading will be of no concern to us here because it reflects Surface Structure word order and is straightforward. What needs to be discussed is the inverse scope reading with the meaning \( \neg \text{everyone has read the book} \). Following the Neg Stranding Hypothesis, the base-structure of this reading would be as follows:

(109)

```
  PerfP
     \_ SPEC
        \_ Perf
           \_ vP
              \_ SPEC
                 \_ has
                    \_ SPEC
                       \_ DP
                          \_ SPEC
                             \_ not
                                \_ SPEC
                                   \_ D'
                                      \_ D
                                          \_ NP
                                              \_ everybody
```

In this sentence the lower DP, which contains everybody, moves to subject position via [SPEC, PerfP] and in so doing it strands the negation marker. The Perfect auxiliary moves to T and AgrS. This produces the following word order:

(110) Everybody has not read the book.

At this point, an optional phonological rule converts has + not to hasn’t. The negation marker is embedded in DP and does not c-command v’. A sentential negation reading is ruled out. The negation marker has scope over the chain of the
trace of the moved DP. Or, if you prefer, under the copy theory of movement the lower copy of the DP everybody will be interpreted under the scope of the constituent negation marker. Either way, a \([- \exists \forall]\) reading is thus preserved and the sentence poses no problem for the Neg Stranding Hypothesis.

3.2.4 Neg Stranding when no Negation Marker is Present

There is one other type of sentence that provides a special challenge to the Neg Stranding Hypothesis, and that is one in which the negation marker has been absorbed morphologically. Consider the following German sentence:\(^{13}\)

(111) Jeder Student muß kein Auto haben.

For some speakers, this sentence is ambiguous for the following two readings:

(112) a. Not every student has to have a car. \([- \exists \forall]\)
    b. No student has to have a car. \([\exists \forall > -\] \)

My approach to deriving the \([- \exists \forall]\) reading of (111), if I am consistent with my own theory, would have to involve a negated constituent and Neg Stranding. After all, this is a case where negation is lower than the quantifier but there is a \([- \exists \forall]\) reading. My base structure for this sentence would therefore have to be as follows:

\(^{13}\) My thanks to Arnim von Stechow and Doris Penka for challenging me with this sentence during my presentation at the Workshop on Negation and Polarity at the Universität Tübingen in March 2007.
I place the quantifier jeder (each) in D rather than in the head position of a QP, even though it is a universal quantifier. I take this approach because jeder cannot be stranded and cannot co-occur with a determiner. I treat the subject as a negated DP, with the negation marker in SPEC of DP. Finally, the Surface Structure negative quantifier kein (no) is replaced in the base-structure with the (unnegated) indefinite article ein.

To derive (111) from (113), the subject DP jeder Student (each student) moves to subject position, stranding the negation marker in DP, and the modal muß (must) moves to its V-2 position. At this point in the derivation, we have the following:

(114) Jeder Student muß nicht ein Auto haben.
    each student must not a car have

The final step in the derivation is the application of a rule that changes nicht + ein to kein and produces (111). Such rules are not unheard of. A similar thing occurs in English, as can be seen in the following two sentences:

(115) a. John has not a friend in the world.
    b. John has no friend in the world.

Sentences such as (111) are thus no problem for the Neg Stranding Hypothesis.14

3.2.5 Neg Stranding and Raising Verbs: Locality Constraints

Before concluding this sub-section, it is important to point out an interesting phenomenon related to Neg Stranding in the context of raising verbs. Observe the following sentences:

(116) a. Not all the students seem to have read the book.
    b. The students do not all seem to have read the book.
    c. All the students do not seem to have read the book.

The sentences in (116) mean the same thing and are unambiguous for a reading of constituent/quantifier negation rather than for sentential negation. In (116b) the negated quantifier not all has been stranded in the upper clause. In (116c) Neg Stranding has occurred, that is, the negation marker has been stranded without the quantifier, again in the upper clause. (Regarding (116b) and (116c), see the appendix to this chapter for a discussion of how constituent negation interacts with do-

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14 The rule that converts nicht + ein to kein is problematic because it is difficult to classify. It is certainly not a phonological rule. It does not seem to be morphological either, because morphological rules, especially those pertaining to word formation, presumably apply at the lexical level. The unusual nature of this rule may be related to the fact that the inverse scope reading of (111) is unavailable to many speakers. In any case, the analysis of kein as negation plus the indefinite article is nothing new. Krifka (1998) also argues that in order to explain ambiguity one must have the option of analysing kein as nicht plus ein. Krifka cites other sources where the same claim has been made, such as Kratzer (1995) and Jacobs (1980). See Krifka (1998) p. 104-105.
But what about Neg Stranding in the lower clause? We have already seen that the stranding of a negated quantifier in the lower clause in a raising construction is possible, as predicted by the Stranding Analysis:

\[(117)\]
\[
\begin{align*}
\text{a. The students seem to have not all read the book.} \\
\text{b. The students seem to not all have read the book.} \\
\text{c. The students seem not all to have read the book.}
\end{align*}
\]

However, whereas a negated quantifier can be stranded in a lower clause and produce an unambiguous reading of constituent negation, if a negation marker is stranded alone in a lower clause it loses its ability to retain its scope over the subject QP. This can be demonstrated by simply taking the sentences in (117) and moving the quantifier up and away from the negation marker:

\[(118)\]
\[
\begin{align*}
\text{a. All the students seem to have not read the book.} \\
\text{b. All the students seem to not have read the book.} \\
\text{c. All the students seem not to have read the book.}
\end{align*}
\]

These sentences are all grammatical, but they do not allow a \(\neg \forall\) reading, which shows that the scope of negation is limited to the clause that it is contained in. This could very well be due to the principle of in situ interpretation of negation, which I will present in Section 4.

The observation that there is a locality restriction on the interpretation of negation raises an interesting question: Why should there be such a constraint and what higher principle can it be deduced from? After all, we saw in (117) that the stranding of a negated quantifier in a lower clause is permissible in a raising situation. In these sentences the negated quantifier has scope over an A-chain that ends in a higher clause, but ungrammaticality does not ensue. Neither does ambiguity. I would like to suggest that if there is a higher principle from which this locality constraint on negation can be derived, it might well be based on the criterion of \textit{strength of quantification}. Negation is a powerful quantifier. (What more can happen to one than being negated?) Negation is also very fundamental to the semantics and truth value of a sentence or clause. Intuitively, because of its relative quantificational strength, one would probably want to restrict its scope to its local domain.\(^{15}\) More will be said about the relative quantificational strength of negation in Section 6.1. In any case, the locality constraint that we have been discussing enables us to explain why a stranded negation marker in sentences like those in (118) can only be construed as negating the local infinitival phrase.\(^{16}\)

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\(^{15}\) This locality constraint on negation needs to be more clearly defined. Negation can, for example, license a NPI in a lower clause, as in I didn’t want you to buy anything for me. On the other hand, NPI licensing is not quite the same as taking scope in the semantic sense.

\(^{16}\) There is one other issue related to raising. The English sentence \textit{All the students do not seem to have read the book} allows only a \(\neg \forall\) reading while its equivalents in German and Dutch are ambiguous. These are \textit{All die Studenten scheinen nicht das Buch gelesen zu haben} and \textit{Al de studenten lijken niet het boek gelezen te hebben}, respectively. I surmise that this is the effect of \textit{do}-insertion.
3.2.6 Recapitulation of Sub-Section 3.2

In Section 3.2 I have presented five issues with the Neg Stranding Hypothesis. The first issue is that although Neg Stranding purports to be independent of other disambiguation methods such as reconstruction, under the copy theory of movement it does seem to involve reconstruction. I argued that Amovement reconstruction is an unreliable way to account for ambiguity and suggested that under Neg Stranding reconstruction is not necessary because of the structural (mutual c-command) relationship that the stranded negation marker has with the lowest trace of the moved (stranding) constituent. This is admittedly a weakness in the analysis, but if one relies on A-movement reconstruction to resolve ambiguity one must make the ad hoc stipulation that A-movement reconstruction is not possible in the Romance languages, perhaps because of NegP. Regardless of whether or not one believes in A-movement reconstruction, I demonstrated that Neg Stranding occurs. Since Neg Stranding occurs and can account for inverse scope, it makes sense to rely on it to resolve ambiguity rather than relying on something as problematic as A-movement reconstruction, which is not even possible in the Romance languages.

Besides reconstruction, other issues with Neg Stranding that I have presented have to do with phonological or morphosyntactic rules and with an apparent locality constraint that affects Neg Stranding in raising constructions. These were argued to be unproblematic for Neg Stranding. The conclusion is that the Neg Stranding Hypothesis is necessary and there is no compelling reason to reject it.

3.3 Review of Section 3

In Section 3.1, in order to explain inverse scope in the West Germanic Languages I presented the Neg Stranding Hypothesis, whereby the negative component of a negated quantifier, the negation marker, can be stranded alone, without the quantifier. This approach accounts for the two readings of a sentence such as All the students have not read the book by positing two different base-structures. The base-structure in (119a) sets the stage for Neg Stranding and a [\neg > \forall] reading while (119b) produces sentential negation and a [\forall > \neg] reading:

```
(119)  a.   QP       b.   PerfP
       SPEC       SPEC
       not       not

       SPEC       Perf'
       Q'         vP

       SPEC       SPEC
       Q           v'

       all the students
```

The diagrams show the sentence structure for both readings.
I treat Neg Stranding as a phenomenon that is related to the stranding of other syntactic entities such as quantifiers and prepositions. A stranded element has a symmetric c-command (sister) relationship with the lowest trace of the element that strands it. This seems to enable it to retain scope over the entire chain of that moved element. In (119a), for example, the negation marker is a sister to the QP that will strand it and will thus retain scope over the entire A-chain of that moved QP. Under this approach the structure in (119b) only results in a [∀ > ¬] reading even though the negation marker c-commands a trace of the moved subject QP just as it does in (119a). I have attributed this to the fact that the negation marker in (119b) does not have the same relationship to the moved QP as it does in (119a), in which it has a sister relationship with the lowest trace of the moved QP.

In Section 3.2 some challenges to the Neg Stranding Hypothesis were presented, the most difficult of which was the question of whether Neg Stranding involves reconstruction under A-movement. I demonstrated that A-movement reconstruction is not a reliable method of resolving ambiguity and that it is not even permitted in sentences involving negation in the Romance Languages. I therefore concluded that Neg Stranding does not rely on reconstruction per se but on the fact that a stranded negation marker has a symmetric c-command (sister) relationship with the lowest trace of the stranding QP and in this way retains its scope over the entire A-chain of that QP. In any case, I showed that whether one believes in A-movement reconstruction or not, the Neg Stranding Hypothesis is necessary.

One might say that the Neg Stranding Hypothesis is a bit unorthodox. I would argue that it is not unorthodox and that it is related to other stranding phenomena. Nonetheless, in the next section I will present some alternative approaches.

4. Alternatives to the Neg Stranding Hypothesis: Movement at LF, Partial Deletion

The reader is reminded that the whole point of the Neg Stranding Hypothesis is to explain inverse scope readings, that is, the availability of a [∀ > ¬] reading in spite of [¬ > ∀] word order, as in the following sentence:

(120) All the students have not read the book.

Neg Stranding involves base-generating the negation marker as a SPEC of (adjunct to) QP. Since in this sub-section we will be looking for an alternative to Neg Stranding, we will look at structures in which the negation marker is base-generated in a position appropriate for sentential negation rather than inside QP. I will follow Zeijlstra (2004) and assume that negation markers in the Germanic languages are specifiers of a verbal phrase. More details of Zeijlstra’s theory are presented in Section 6 of this chapter.

When faced with the problem of explaining inverse scope, covert movement is probably the first solution that comes to mind. Under this approach, in order to obtain the [¬ > ∀] reading of a sentence like (120) the negation marker could simply
be moved and adjoined to the quantifier all at LF. On the other hand, it has been argued in Kayne (1998) and elsewhere that scope is determined hierarchically, not through covert movement. I will argue that this claim is certainly valid for negation. I begin with an example from Italian:

(121) a. Tutti gli studenti non l’hanno letto.  
   all the students not it have read

b. Non tutti gli studenti l’hanno letto.  
   not all the students it have read

If covert movement of negation were possible, it would be possible to move the negation marker in (121a) to a position in front of the subject QP at LF, producing the reading of (121b). However, there is only one reading of (121a). This shows that negation cannot be covertly moved, but is interpreted in situ, as argued in Section 3.2.5. The Neg Stranding Hypothesis accounts for the scope of negation based on structure and does not rely on covert movement.

Consider now the following sentences from English:

(122) a. Many species of furry animal are not mammalian.

b. Not many species of furry animal are mammalian.

These two sentences are neither synonymous nor ambiguous. The normal interpretation of the quantifier many is cardinal in the (a) sentence and proportional in (b). This is based on the observation that cardinal quantifiers such as numerals cannot appear as subjects if they are negated:

(123) *Not three species of furry animal are mammalian.

Covertly moving the negation marker in (122a) to produce (122b) would therefore do more than just change the scope of negation. It would produce a proportional interpretation of many. This suggests that covert movement does more than we want it to do. Consider now the following German sentence from Höhle (1991):

(124) Alle Politiker hat so mancher nicht verstanden.
   all politicians has many a person not understood

In this sentence the direct object Alle Politiker (all politicians) has been topicalised. The word Alle (all) has rising intonation and nicht (not) has falling intonation and primary stress. The meaning of the sentence is that there are several people who did not understand all the politicians. Scopal relations are thus [∃ > ¬ > ∀]. The question is whether the [¬ > ∀] reading could have been obtained by moving negation at LF. Höhle argues against this option by pointing out that moving the negation marker to the position in front of the universal quantifier does more than just create a [¬ > ∀] reading. It changes a [∃ > ¬ > ∀] reading to a [¬ > ∀ > ∃]...
reading. Thus, we see again that covert movement of negation does much more than it is supposed to do, and is probably not the right solution. The Neg Stranding Hypothesis handles the issues in (122) and (124) and the ambiguity in (120) in a much more elegant way by placing the negation marker in \([\text{SPEC, QP}]\) if there is a \([- > \lor]\) reading and in the specifier position of a verbal phrase if there is a \([\lor > -]\) reading. Scope is determined hierarchically and not via covert movement.

There is one other alternative to Neg Stranding that I will consider here, namely, the idea of partial deletion in the manner of Nunes (2004). Nunes’ approach is based on the copy theory of movement. Theoretically, as an alternative to Neg Stranding, in a sentence like (120) optional partial deletion could have taken place as follows:

\[(125) \quad [\text{IP} \{\text{QP Not all the students} \} \{\text{PerfP have} \{\text{vP \{QP not all the students\} read the book\}}]\]]\]

Nunes points out that this type of deletion (called \textit{chain reduction}) is needed for two reasons. First of all, normally only one copy in a chain can be pronounced:

\[(126) \quad *[\text{IP} \{\text{QP Not all the students} \} \{\text{PerfP have} \{\text{vP \{QP not all the students\} read the book\}}]\]]\]

Secondly, in keeping with the Linearization Correspondence Axiom (LCA) from Kayne (1994), copies are non-distinct. Consequently, if there is more than one copy of an item, it is unclear which copy should be linearised with the other elements in a clause. Linearisation will thus not take place and the derivation will crash. The following sentence illustrates this. It is a passive sentence, in which there are two copies of the grammatical subject, since it originates as the object of the verb:

\[(127) \quad \text{John was kissed John.}\]

Nunes points out that partial deletion needs to be constrained in order to prevent it from generating absurd sentences. Consider the following sentence from Nunes:

\[(128) \quad \text{The tall man appears to have been kissed.}\]

In the derivation of (128) there are three copies of the subject forming a chain:

\[(129) \quad [\text{The tall man}] \text{appears} [\text{the tall man}] \text{to have been kissed} [\text{the tall man}].\]

In order to derive the desired version of this sentence, two deletion operations are needed, as follows:

\[(130) \quad [\text{The tall man}] \text{appears [the tall man]} \text{to have been kissed [the tall man].}\]

Using partial deletion, one could easily generate the following absurd sentence:
(131) *The appears tall to have been kissed man.

This sentence would be derived by deleting as follows:

(132) [The tall man] appears [the tall man] to have been kissed [the tall man].

Nunes refers to this as “scattered deletion.” He blocks this type of output by appealing to principles of Economy. In the correct version of this sentence, as I just mentioned, there are only two deletion operations. In this nonsensical product of scattered deletion, there are at least four deletion operations. Thus, only the correct version will be generated by the system because Economy will block other outputs.

Nunes’ approach has the advantage of handling the issue of optionality very well, assuming that quantifier stranding and Neg Stranding are optional. However, upon closer inspection, a partial deletion approach is unable to generate the \( \neg > \forall \) reading of a sentence like (120). Remember that in the base structure of this sentence the subject is the negated QP not all the students. If we do not strand the negation marker, we have just one deletion operation in the derivation, as follows:

(133) [Not all the students] have [not all the students] read the book.

If we want to produce (120) with a \( \neg > \forall \) reading, not one but two deletion operations are needed, as follows:

(134) [Not all the students] have [not all the students] read the book.

Nunes’ prediction is therefore that this version of the sentence will never be generated because it involves more deletion operations than (133). This false prediction of the partial deletion approach affects not only Neg Stranding. It affects all kinds of stranding, including quantifier stranding or even preposition stranding. For this reason, Nunes’ partial deletion approach is not a viable alternative to Neg Stranding (or any other type of stranding analysis.)

To summarise this section, it seems that there are no particularly attractive alternatives to the Neg Stranding Hypothesis. Analyses involving movement of negation at LF and partial deletion prove to be inadequate. (There is actually one more alternative to the Neg Stranding Hypothesis that I will consider in Sections 6.1 and 6.3 when I discuss Zeijlstra (2004). I will argue that Neg Stranding is also preferable to this approach.)

Having now looked at negated quantifiers in the Germanic languages, in Section 5 we will look at the Romance languages in order to investigate the cross-linguistic applicability of the conclusions reached so far.
5. Negated Quantifier Stranding in the Romance Languages

It is well documented that universal quantifiers in the Romance languages can float, as is illustrated in the following examples:\textsuperscript{17}

French:

(135) Les étudiants ont tous lu le livre.
the students have all read the book

Italian:

(136) Gli studenti hanno letto tutti il libro.
the students have read all the book

Romanian:

(137) Studenţii au citit toţi cartea.
students the have read all book the

Portuguese:

(138) Os alunos têm lido todos o livro.
the students have read all the book

Spanish:

(139) Los alumnos han leído todos el libro
the students have read all the book

Catalán:

(140) Els estudiants han llegit tots el llibre.
the students have read all the book

Negated quantifiers also seem to exist in the Romance languages:

French:

(141) Pas tous les étudiants ont lu le livre.
not all the students have read the book

\textsuperscript{17} My thanks to the following informants: Enoch Aboh, Elisabetta Materassi, Mara Radulescu van Schaik, Ana Paula Quadros Gomes, Jorge Gomez Rendón and Jordi Fortuny.
Italian:
(142) Non tutti gli studenti hanno letto il libro.
not all the students have read the book

Romanian:
(143) Nu toți studenții au citit carte.
not all students the have read book the

Portuguese:
(144) Nem todos os alunos têm lido o livro.
not all the students have read the book

Spanish:
(145) No todos los alumnos han leído el libro
not all the students have read the book

Catalán:
(146) No tots els estudiants han llegit el llibre.
not all the students have read the book

These sentences are all unambiguous. They all mean that there is at least one student who has not read the book. The negation marker takes scope only over the quantifier, not the vP, and we have in each case a negated quantifier and not sentential negation. What is interesting is that while it is relatively easy to float negated quantifiers in West Germanic, it is impossible to do so in Romance:

French:
(147) *Les étudiants ont pas tous lu le livre.
the students have not all read the book

Italian:
(148) *Gli studenti hanno letto non tutti il libro.
the students have read not all the book

Romanian:
(149) *Studenții au citit nu toți carte.
students the have read not all book the
However, whereas a negated quantifier cannot be floated, a non-negated quantifier can nonetheless be floated in the case of syntactic sentential negation, which is further evidence that sentential negation and constituent negation are different. This is demonstrated in the following sentences:

French:

(153) Les étudiants n’ont pas tous lu le livre.
the students not have not all read the book

Italian:

(154) Gli studenti non hanno letto tutti il libro.
the students not have read all the book

Romanian:

(155) Studenții nu au citit toți cartea.
students not have read all book the

Portuguese:

(156) *Os alunos não têm lido todos o livro.
the students not have read all the book

Spanish:

(157) *Los alumnos no han leído todos el libro
the students not have read all the book
It is very important to point out that although these sentences are examples of syntactic sentential negation, semantically speaking they are instances of quantifier negation, since their only possible reading is $[\neg \rightarrow \forall]$. It is also very interesting and relevant that if the quantifiers in these sentences had not been floated, the sentences would have been downgraded:

French:

(159) Tous les étudiants n’ont pas lu le livre.
    all the students not have not read the book

Italian:

(160) Tutti gli studenti non hanno letto il libro.
    all the students not have read the book

Romanian:

(161) */?Toți studenții nu au citit cartea.
    all students the not have read book the

Portuguese:

(162) */?Todos os alunos não têm lido o livro.
    all the students not have read the book

Spanish:

(163) ?Todos los alumnos no han leído el libro
    all the students not have read the book

Catalán:

(164) ?Tots els estudiants no han llegit el llibre.
    all the students not have read the book

As the reader can see, most speakers of a Romance language find the structure in the last set of examples to be marked. Speakers who find (159) to (164) grammatical or marginal report a $[\forall \rightarrow \neg]$ (sentential negation) reading. The exception is French, which allows only a $[\neg \rightarrow \forall]$ reading. French is of course special because of its use of two negation markers, ne and pas.
The data presented so far in this section lead to four observations that are crucial to the remainder of this chapter. The first observation is that, as shown in (147) to (152), negated quantifiers cannot be stranded in the Romance languages the way they can in the Germanic languages. The second, third and fourth observations all have to do with issues that arise when a quantifier outscopes negation in the Romance languages:

The second observation is that the sentences in (153) to (158) seem to be cases of sentential negation syntactically, but they have only a $[\sim > \forall]$ reading and are therefore semantically cases of negated quantifiers. This is not what we found in the Germanic languages, in which syntactic sentential negation implied a $[\forall > \sim]$ reading.

The third observation is that if in (153) to (158) the quantifier is not stranded, markedness or ungrammaticality can arise, as is demonstrated in (159) to (164). This does not occur in the Germanic languages, where a quantifier can outscope negation without causing downgrading.

The fourth and final observation is that if the sentences in (160) to (164) are accepted at all, they have only a $[\forall > \sim]$ reading, while their counterparts in the West Germanic languages allow a $[\sim > \forall]$ and a $[\forall > \sim]$ reading.

These four observations pose four questions about differences between the Germanic and the Romance languages in their handling of negated quantifiers. It is my aim in the following section to answer these four questions. It would seem that the best way to begin looking for an answer to these questions would be to examine differences between how negation is structured in the West Germanic and Romance language families, and Zeijlstra (2004) deals with precisely this topic. We will look at how Zeijlstra’s theory can be applied to my findings in the next section.

6. Explaining the Differences between Germanic and Romance Negated Quantifiers

6.0 Introduction

In this relatively long section I offer an explanation for the differences between the Romance and Germanic languages introduced in the preceding section. My theory will draw on the theory of negation put forth in Zeijlstra (2004). Zeijlstra’s theory is mainly concerned with sentential negation and does not deal with negated constituents per se, however it does refer specifically to sentential negation and universal quantifiers, which is closely related to the subject matter of the present work. The most relevant parts of Zeijlstra’s thesis are Chapters 3, 5, 6 and 8.

This section is organized as follows: Section 6.1 is a presentation of the relevant aspects of Zeijlstra (2004). Section 6.2 deals with my approach to explaining the behaviour of negated quantifiers in the Romance languages and addresses the four
questions raised at the end of Section 5. Section 6.3 addresses negated quantifiers in the Germanic languages. Section 6.4 presents an unresolved issue with the Germanic VO languages. Section 6.5 is a synopsis of Section 6.


The foundation of Zeijlstra’s theory is the claim that negation is not a functional category in all languages. Languages in which negation is a functional category, such as the Slavic and the Romance languages, make use of a NegP that is headed by a negation marker and is located between vP and TP. Languages that have no functional category for negation, such as the West Germanic languages, have no NegP. In these languages, the negation marker is not a head but a maximal projection located in the specifier position of a verbal phrase. This distinction between languages with and without NegP enables Zeijlstra to predict with high accuracy whether a language will have preverbal or post-verbal negation markers and whether it will have negative concord and true negative imperatives. It also enables him to predict to some extent how a language will allow negation to interact with universal quantifiers, although there are issues in this area, as I will point out.

Another important feature of Zeijlstra’s theory is the claim that negation markers in the Romance languages such as the Italian non and the Spanish no are base-generated in Neg (as heads of NegP). They carry an interpretable negative feature [iNeg] and are referred to as strong negation markers. The French negation marker ne is also the head of NegP, but it carries an uninterpretable negative feature [uNeg] and is referred to as weak. The French negation marker pas is base-generated as an adjunct to vP and carries the feature [iNeg]. It moves to [SPEC, NegP], where it checks the [uNeg] feature on ne. The [uNeg] feature on ne is then eliminated by the interpretable feature on pas by means of SPEC-Head agreement.

There is one more aspect of Zeijlstra’s theory of NegP languages that should be mentioned, and that is that there is a phonologically empty negation operator, referred to as Op ¬, that bears an [iNeg] feature and occupies SPEC of NegP. In strict negative concord languages, in which the negation marker bears the feature [uNeg], this operator provides the negative semantics to a phrase. In non-strict negative concord languages like Spanish and Italian, the negation marker bears the feature [iNeg] and can be the “realisation” of Op ¬, although it is in a head position rather than a specifier position.

We proceed now to Zeijlstra’s treatment of languages without NegP. In the Germanic languages, for example, negation markers like not, (English) nicht

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18 In Zeijlstra (2004) the location of NegP is parameterised. It is below TP in the Romance and Slavic languages, but it is above TP, in, for example, Hindi.


(German) and niet (Dutch) are base-generated as adjuncts to vP and carry the feature [iNeg]. It is for this reason that they do not move.

Zeijlstra also refers to a general (cross-linguistically valid) constraint against raising a universal quantifier above a negation marker. 21 This refers mainly to Quantifier Raising at LF. I believe in the validity of this constraint because there is indeed cross-linguistic evidence that sentences are problematic when a universal quantifier outscopes negation, as shown in (159) to (164). I will come back to this constraint several times in the remainder of this chapter. I will refer to it as [*\forall QR/Neg], to be read, “No universal quantifier raising over a negation marker.” Later in this section I will discuss the relevance of this constraint to the four open questions listed at the end of Section 5.

Based on the constraint [*\forall QR/Neg] and the fact that in NegP languages negation dominates vP, Zeijlstra makes two predictions or claims. The first is that sentences in which a universal quantifier precedes negation will tend to be marked. This prediction is correct, as shown in (160) to (164). The second prediction is that because NegP is highly positioned and dominates all the verbal phrases, even if a universal quantifier precedes negation in the Surface Structure there will be a reverse scope or [\neg > \forall] reading. This prediction is false. In languages with preverbal negation markers, if a quantifier precedes negation in spite of [*\forall QR/Neg], there is a very strong tendency for speakers to allow only a [\forall > \neg] reading. Consider the following examples, all of which mean No student has read the book:

**Russian:**

(165)  ?/*Vsje studjenty nje pračitaly knigu. 22  
all students not read book

**Bulgarian:**

(166)  ?Vsi\'ki studenti ne sa čeli knigata. 23  
all students not have read book the

**Italian:**

(167)  ?Tutti gli studenti non hanno letto il libro.  
all the students not have read the book

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22 My thanks to Ekatarina Bobyleva for this judgement.
23 My thanks to Margarita Gulian for this judgement.
The failure of this second prediction helps rather than hurts Zeijlstra’s theory. As I argued in Section 3.2.5 and Section 4, negation should be interpreted in situ. In (165) to (169) the quantifier is in [SPEC, AgrSP] and c-commands the negation marker. We would therefore not expect negation to outscope the quantifier in these sentences.

Another important claim in Zeijlstra (2004) is that both subjects and negation markers in non-NegP languages are base-generated in [SPEC, vP], so that there is nothing preventing the subject and the negation marker from being base-generated in opposite positions, allowing either one to take scope over the other:

(170) a.  

```
     SPEC               vP
    /g10/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g10/g3
SPEC              vP
    /g10                       /g3
(negation marker)          (subject)
```

b.  

```
     SPEC               vP
    /g10/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g3/g10/g3
SPEC              vP
    /g10                       /g3
(negation marker)          (subject)
```

In this way Zeijlstra attempts to account for the difference between sentential negation and constituent negation. He says that in sentential negation, Neg takes scope over the entire proposition, including the subject, as in (170a), while in constituent negation, negation has scope only over the lower vP constituent, as in (170b). It is very important to point out that Zeijlstra uses the difference in scope shown in the above two tree diagrams to explain the type of inverse scope that I explain using the Neg Stranding Hypothesis. Consider, for example, the two possible readings of sentences like the following, taken from Dutch:26

(171) Iedereen loopt niet.
    everyone walks not

Zeijlstra says that the standard interpretation of this sentence, which is based on (170b), is the [∀ > ¬] reading, with the meaning Nobody walks. A [¬ > ∀] reading,

24 My thanks to Tamás Biro for this judgement.
25 My thanks to Ellen Xu for this judgement.
which is based on (170a) and has the meaning Not everyone walks, is also possible, although this is a sub-standard reading not accepted by everyone. The fact that this reading is downgraded can very possibly be attributed to a violation of [*∀QR/Neg]. Zeijlstra must still explain how the [¬ > ∀] is possible given the [∀ > ¬] word order. He does this by claiming that when the subject quantifier iedereen (everyone) moves in (170a), only its syntactic and phonological features move, while its semantic features remain behind, thereby maintaining the desired scopal relations. I will explain in Section 6.3 why I prefer the Neg Stranding Hypothesis as a means of accounting for the second reading of (171).

Before concluding this sub-section, I would like to address the question of why a principle such as [*∀QR/Neg] would exist at all. I would propose the admittedly subjective hypothesis that it follows from my claim in Section 3.2.5 that negation is simply a stronger form of quantification than a universal quantifier. One could say that there is a hierarchy of quantificational strength and that negation simply outranks universal quantification in that hierarchy. If this is true, it is no surprise that the negational functional category is typically located higher than other types of quantification, especially in NegP languages. This could explain why it is almost universally unnatural for universal quantification to outscope negation. The word order [∀ > ¬] creates a kind of potential ambiguity or conflict because the order of the two elements (and their scope, given that Neg is interpreted in situ) is not consistent with the relative strength of negation vs. universal quantification. This is why sentences with [∀ > ¬] word order are avoided. It is very easy to avoid such sentences, because there are simple, unambiguous alternatives. I offer examples from English to illustrate this. Consider first the following ambiguous sentence:

(172) All the students did not come.

The two possible interpretations of this sentence can easily be unambiguously formulated in the following ways:

(173) Not all the students came.

(174) No student came.
Similar alternative strategies exist cross-linguistically. To summarise, then, I am suggesting that there are perhaps hierarchies of strength in quantification, and negation would be the strongest. 27

I have presented the applicable aspects of the theory of sentential negation in Zeijlstra (2004). I am now ready to draw on this theory in order to present my own theory of constituent or quantifier negation. In Section 6.2 I discuss NegP languages and address the four questions presented at the end of Section 5. In Section 6.3 I discuss non-NegP languages.

6.2. NegP Languages

6.2.0. Introduction

This sub-section will have five parts, one for each of the four questions raised at the end of Section 5 plus a review of Section 6.2.

6.2.1. Sentential Negation with Negated Constituent Reading

The first question is as follows: Why is it that in the Romance languages grammatical sentences which contain a universal quantifier and look like cases of sentential negation only allow a negated quantifier reading if the quantifier follows negation?

This question relates to sentences (153) to (158). One of these, sentence (155) from Romanian, is repeated here for convenience:

\[ (175) \text{ Studenți nu au citit toți cartea.} \]

The forced \([\neg > \forall]\) reading of this sentence is a direct result of the positioning of negation in the Romance languages. Because the negation marker in a sentence such as (175) is in the head position of NegP, it c-commands everything that comes after it. Thus, even though it is a sentential negation marker it takes scope over the quantifier and a \([\neg > \forall]\) reading is the result. I should point out that the same thing can happen in the Germanic languages if a quantifier is stranded below a sentential

27 This idea of the relative strength of different types of quantification is not the same as the scopal hierarchy that one finds in Beghelli and Stowell (1997) or Brody and Szabolcsi (2003). Nor is it the same as the scales of implicature in, for example, Büring (1997), which refer to the relative implicature or entailment of quantifiers with respect to each other, such as \(\text{always} > \text{often} > \text{sometimes} > \text{once}\). Nonetheless, it would be surprising if strength of quantification were not related in some way to scopal hierarchy and scales of implicature. An investigation of this would be beyond the scope of this thesis, but the topic deserves investigation. Büring (1997) also notes that if two “extreme quantifiers” like \text{not} and \text{all} co-occur and one has rising and the other falling intonation, the positive extreme cannot take scope over the negative extreme. He does not go so far as to propose a hierarchy of strength, but this is indirectly implied in his observation.
negation marker (a negation marker that negates the finite verb in the clause). Observe the following example from English:

(176) The children may not have been all watching the movie.

This cannot be a case of Neg Stranding, given that the negation marker is higher than the quantifier. Negation immediately follows the finite modal verb *may*, so it is a sentential negation marker. A quantifier has been stranded well below the negation marker and is c-commanded by it. The only reading available for this sentence is that it may be the case that not all the children have been watching the movie. Note that we are not talking about traces here. In both the Romance and Germanic languages, if a quantifier is stranded within the c-command domain of negation, it is reasonable to expect that it will fall under the scope of negation.

6.2.2. Difficulty of $[\neg > \forall]$ Inverse Scope in the Romance Languages

Why can the negation marker be outscoped by the universal quantifier in West Germanic while this is difficult or impossible in the Romance languages, as indicated in (159) to (164)?

This question refers to sentences like the following Italian one, which only allows a $[\forall > \neg]$ reading, and its English equivalent, which allows a $[\forall > \neg]$ or a $[\neg > \forall]$ reading:

(177) a. Tutti gli studenti non hanno letto il libro.
    all the students not have read the book

b. All the students have not read the book.

I have argued that the ambiguity of a sentence like (177b) can be explained by positing two different base-structures, as follows:

(178) a. $\begin{array}{c}
\text{QP} \\
\text{not} \\
\text{SPEC}
\end{array}$

b. $\begin{array}{c}
\text{PerfP} \\
\text{not} \\
\text{SPEC}
\end{array}$

The structure in (178b) generates sentential negation and a $[\forall > \neg]$ reading. The structure in (178a) combined with Neg Stranding produces the $[\neg > \forall]$ reading. Thus, the Germanic languages have two options. One might ask why an inverse
scope reading is not possible under (178b), since the negation marker in both (178a) and (178b) c-commands a trace of the moved subject. As I mentioned in Section 3.1, in a structure like (178a) the negation marker is embedded in the phrase where the moved subject QP originated and has a sister relationship with the lowest trace of that QP. Negation thus takes scope over the entire A-chain of the moved constituent. The same cannot be said of the negation marker in (178b). Regarding (177a), I would argue that it is not ambiguous because the Romance languages have only one option, namely, the following one:

\[
(179) \quad \text{NegP} \\
\quad \text{SPEC} \quad \text{Neg'} \\
\quad \text{Neg} \quad \text{PerfP}
\]

The point is that the Germanic languages have the option of sentential or constituent negation while the Romance languages have only the sentential negation option. The constituent negation option is not available in the Romance languages because the negation marker in the Romance languages is a syntactic head and cannot simply be adjoined to a maximal projection the way Germanic negation markers can. The concept of a Germanic-style negated QP is thus not possible in the Romance languages.

6.2.3. Markedness of [∀ > ¬] Word Order in the Romance Languages

The question is why [∀ > ¬] word order in the Romance Languages seems to cause markedness or downgrading, as shown in (160) to (164) or (177). This question has for all practical purposes already been answered. The raising of a quantifier across negation seems to violate a general principle, which I have abbreviated [∀QR/Neg]. I would venture to say that even languages in which the [∀ > ¬] word order is grammatical it is less natural, as I discussed in Section 6.1. In other words, there are unambiguous alternatives to sentences like (177b).

6.2.4. No Stranded Negated Quantifiers in the Romance Languages

The fourth and final question from Section 5 is as follows: Why can negated quantifiers be stranded in the Germanic languages but not in the Romance languages? This question refers to the contrast seen in the following pair of Spanish sentences:

(180) No todos los alumnos han leído el libro.
not all the students have read the book

(181) *Los alumnos han leído no todos el libro.
the students have read not all the book
This phenomenon cannot be explained by appealing to the [*vr/Neg] constraint, because in (181) the universal quantifier does not have scope over the negation marker. There must be another explanation for why a negated quantifier cannot be stranded in the Romance languages. Could it be that there simply are no negated quantifiers in NegP languages, and that what looks like a negated quantifier in (180) is really something else? Upon closer inspection, this might actually follow from Zeijlstra’s NegP theory. In the Germanic languages, since the negation marker is a maximal projection that occupies a SPEC position, it can be embedded in the SPEC position of any phrase, including QP, and help to form a true negated quantifier. In the Romance languages, negation markers are syntactic heads. One would therefore not expect them to occupy SPEC of QP, and this prevents the formation of negated QPs like those in the Germanic languages. There is in fact much less evidence in Romance than in West Germanic that the negation marker and the universal quantifier form any kind of constituent. The best evidence of this is that negated quantifiers can be stranded in West Germanic but not in Romance, even though non-negated quantifiers can be stranded in both language families. In addition to this evidence, I offer the following Italian sentences as evidence that true negated quantifiers do not exist in the Romance languages:

(182) a. Non tutti gli studenti hanno letto il libro.
   not all the students have read the book

b. Non hanno letto tutti gli studenti il libro.
   not have read all the students the book

c. *Hanno letto non tutti gli studenti il libro.
   have read not all the students the book

d. *Gli studenti hanno letto non tutti i libri.
   the students have read not all the books

Let’s take a look at the implications of these sentences one by one. Sentence (182a) could be interpreted as a negated quantifier construction, which I am questioning the existence of, or it could be that the subject QP has combined with the negation marker (or the negation operator) on its way to subject position. This is in fact what I will propose below. Example (182b) is an instance of sentential negation in which the subject QP has not been raised out of SPEC of vP, resulting in VSO word order. The crucial sentence is (182c). If the negated quantifier non tutti (not all) existed, (182c) should be just as acceptable as (182b). That is, the negated quantifier and its complement DP in (182c) should have been able to remain in vP just as the subject QP remained in vP in (182b).

Sentence (182d) shows basically the same phenomenon, except with a direct object instead of a subject. If there were really such a thing as a negated quantifier in the Romance languages, there should be no problem with (182d). Examples (182c) and (182d) are different, given that one contains a negated subject and the other a negated object, but they have something in common, and that is the fact that they
both contain a negated element that has not passed through NegP to a higher position. This reinforces the idea that Germanic-style negated quantifiers do not exist in the Romance languages and that a negated quantifier can only be formed in the Romance languages if the QP containing it moves through NegP and combines with negation. The model that I will propose below addresses this.28

I will now address the issue of how negated quantifiers are formed in the Romance languages. Since I will be basing my analysis and model on an adaptation of Zeijlstra (2004) to constituent negation, it is appropriate to begin by working through some derivations to show how Zeijlstra’s model and my model work. Consider the following two Italian sentences:

(183) I ragazzi non hanno tutti una bicicletta.
    the children not have all a bicycle

(184) Non tutti i ragazzi hanno una bicicletta.
    not all the children have a bicycle

Sentence (183) is an instance of sentential negation with a stranded (unnegated) quantifier and can be derived in a straightforward manner using Zeijlstra’s model. Using Zeijlstra’s approach, a simplified derivation would begin with the pre-movement structure in (185).29 In this diagram, the DP *i ragazzi* (*the children*) will move out of the QP and end up in subject position, in [SPEC, AgrSP]. The quantifier *tutti* (*all*) is stranded in its base-position. The verb *hanno* (*have*), which will start as an uninflected root, moves to Neg, where it picks up the negation marker *non*. It then moves to T, where it picks up present tense, and to AgrS, where it picks up third person plural inflection. A potential problem with this derivation is that the negation marker *non* is not a clitic, which raises the question of whether it should move with the verb as though it were inflection. Zeijlstra says that *non* cannot be subject to incorporation, since it is not a clitic, but it is capable of compounding.30 I take this as a plausible assumption.

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28 I should point out that sentence (182d) can actually be grammatical if the negated quantifier phrase appears in a contrastive *not…but* construction, for example, “The student read not all the books but some of them.” This would presumably involve some kind of Conjunction Phrase or ConjP that would be outside the scope of this study. In any case, it does seem to be the nature of negated non-subject constituents in general that they are grammatical only if they have a contrastive meaning. Why there should be less pressure on negated subjects to have a sharply contrastive meaning is not immediately clear.

29 For ease of presentation I combine vP and VP and omit AgrOP.

If (185) is the derivation of (183), how would I derive (184), given that I do not want to posit a negated quantifier like the ones found in the Germanic languages? As I mentioned, since negated subjects can only appear above NegP, it appears that they must pass through NegP in order to combine with negation. Although this is a rather simple concept, the reader will see that it is difficult to implement it. We begin with the following structure, which is based on (but not identical to) the structure used in Zeijlstra (2004) for sentential negation in the Romance languages:

(186) NegP
     SPEC
     Neg’
     non (not)
     Neg Φ vP
     SPEC
     QP
     [uNeg] tutti gli studenti (all the students)
In this model, I claim that there is an uninterpretable negative feature on the quantifier if the speaker intends to negate it. The feature is thus optional and not lexical. The QP moves to SPEC of NegP to eliminate its uninterpretable feature and combines with Op $\neg$. Because there is at this stage no phonetic realisation of negation, Op $\neg$ is realised as the negation marker *non* and the combination *non tutti gli studenti* (*not all the students*) moves to subject position. This model correctly predicts that there will be no negated quantifiers below NegP, stranded or otherwise.

My model follows Zeijlstra (2004) in two important ways. First of all, it makes use of the distinction between languages that have NegP and those that do not. Secondly, it applies to the nominal (constituent) domain the same derivational methodology that Zeijlstra applies to the verbal (sentential) domain. In Zeijlstra’s model for sentential negation in Italian, for example, a verb moves from v to Neg, head-to-head, and combines with the negation marker. My model runs parallel to Zeijlstra’s except that it deals with the nominal domain and involves SPEC-to-SPEC movement. Note that Zeijlstra’s model and mine both involve right-adjunction to the negation marker or operator, not necessarily what one would expect in head-first languages like the Romance languages.

While my model shows important similarities to Zeijlstra (2004), it also shows two significant departures from it. The optional [uNeg] feature on the QP is one such departure. One would normally expect such a feature to be inherent or lexical in nature and to be borne by negative words such as the Italian *nessuno* (*nobody*) and *niente* (*nothing*). I am proposing that such a feature can be optional, depending on whether a speaker intends to negate the QP or not. There will be more on this shortly.

Another significant departure of the model in (186) from Zeijlstra (2004) is the way in which the negation operator Op $\neg$ is phonetically realised as the negation marker. Zeijlstra does say that the negation marker in a non-strict negative concord language like Italian can be the “realisation” of the operator and accomplish what the operator accomplishes, \(^{31}\) but in saying this he is not claiming that a negation marker, a syntactic head, is jumping from Neg into [SPEC, NegP]. He is simply saying that because the negation marker in a non-strict negative concord language bears an [iNeg] feature and can provide the negative semantics to a phrase and “check” the [uNeg] features of other negative elements, it is the realisation of the negation operator. Therefore, there is a difference between my model and Zeijlstra’s. I should point out that Zeijlstra does claim that there are instances in which a negation operator is phonologically realised in its SPEC position.\(^{32}\) The problem is that in Zeijlstra’s examples it is not the normal sentential negation marker that serves as the phonological realisation of the operator, but another negative word such as *pas* (*not*) in French and (*mai* (*ever/never*)) in Italian. This does not, in my opinion, rule out that the normal sentential negation marker might under some circumstances be the phonological realisation of the negation operator.

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There are two other major issues with the model in (186). The first issue is that it does not explain why the negation operator is not always phonologically realised when it combines with another element. For example, in the following Italian sentence the negative word *nessuno (nobody)* has passed through [SPEC, NegP] and checked its [uNeg] feature by forming a sort of compound with the operator, but there is no phonological realisation of the operator:

(187) a. Nessuno ha fatto niente.
    no one has done nothing
    (No one has done anything.)

b. *Non nessuno ha chiamato.
    not no one has called

To get around this inconsistency, I would have to say that a QP bearing [uNeg] is somehow different from an n-word like *nessuno*. It does not seem unreasonable to say that there is a difference between an indefinite n-word such as *nessuno*, which always bears the feature [uNeg], and a definite QP, which does not inherently bear [uNeg]. Nonetheless, this is difficult to capture formally in a model. The position that I will take on the phonological realisation of the negation operator in the model in (186) is that it is an issue but not a convincing reason to abandon (186).

Another issue with the model in (186) is that it makes a false prediction. Consider again (184), repeated here:

(188) Non tutti i ragazzi hanno una bicicletta.
    not all the children have a bicycle

According to the model in (186), the negation marker in (188) originated as Op ¬ in [SPEC, NegP] and is the phonological representation of the operator. A similar thing occurs in (187a), in which the n-word *nessuno (nobody)* combines with Op ¬ before moving to subject position. The difference between (188) and (187a) is that Op ¬ is phonologically realised in (188) but not in (187a). Here is the problem: In (187a) the operator, which has combined with an n-word, licenses a second n-word in the sentence, namely, *niente (nothing)*. One would therefore expect the negation marker in (184)/(188) to also license another n-word, but it does not:

(189) *Non tutti i ragazzi hanno fatto niente.
    not all the children have done nothing

In order to make this sentence grammatical, a second negation marker is needed:
What is apparently happening is that in (189) the negation marker, which is the phonological realisation of Op , because it is embedded in a QP can no longer bind event variables lower in the sentence. In (187a), a phonological realisation of Op is not necessary because the n-word nessuno (nobody), which is inherently negative, takes over the function of Op . It is not embedded in another phrase and can therefore bind an event variable (and license another n-word) lower in the sentence. The ungrammaticality of (189) is surely an issue with the model proposed in (186) but it would also be an issue for Zeijlstra (2004) and probably for any theory of negation.

I now need to return to the issue of the optionality of the [uNeg] feature that I posit on the quantifier in (186). Normally, such a feature is considered to be lexical, borne by n-words, and not optional. Nonetheless, if the feature cannot be optionally borne by a QP that is not inherently negative, there is no way to force the QP to move through NegP and to subject position. Remember that in languages like Italian, Portuguese, Romanian and Spanish a subject may remain in vP, but not if it is negated.

There are various tricks that one might try in order to avoid positing an optional [uNeg] feature in order to get a negated QP into sentence-initial position, but it seems that they all lead us right back to the need for an optional [uNeg] feature after all. One might, for example, claim that there is a second NegP located above IP and that subjects move into the SPEC position of this higher NegP and this produces sentence-initial negated subjects such as those in (188) and (190). The problem with this approach is that in most Romance languages the subject is not forced to move to canonical subject position. Therefore, placing a NegP above IP only solves half the problem. It gives us the potential for a sentence-initial negation marker, but it does not provide a motive for a subject to move up to it.

Another trick that one might try would be to say that there is a NegP embedded in the SPEC position of the subject QP and that it is this NegP that makes it obligatory for a negated subject QP to move through the NegP that dominates vP. Under this approach, however, one would have to say that there is an [uNeg] feature somewhere in the NegP located in [SPEC, QP]. This is an implausible solution, because in languages like Italian and Spanish neither the specifier nor the head of a NegP bears the feature [uNeg].

We have looked at some serious issues with the model in (186). Those issues notwithstanding, the model has a lot of advantages, which I will now summarise. Because it is based on Zeijlstra (2004) it allows a unified approach to sentential and constituent negation. Also, by claiming that in the Romance languages the negation marker is a head, not a specifier, and that this head is located in NegP, above vP, the model in (186) explains why there can be no stranded negated quantifiers in the Romance languages and no [\(\neg > \forall\)] or inverse scope readings with [\(\forall > \neg\)] word order. It also correctly predicts that negated quantifiers can only be found in canonical subject position in the Romance languages. Subjects with the feature [uNeg] will move up to SPEC of AgrSP and on the way they can pass through
NegP, check their uninterpretable feature and combine with Op $\neg$. If they do not do this, the derivation will crash, as the following Italian sentences illustrate:

(191) a. Sono venuti tutti i ragazzi.
    are come all the children

b. *Sono venuti non tutti i ragazzi.
    are come not all the children

Object quantifiers bearing the feature [uNeg] would normally not have the occasion to move high enough to check their uninterpretable feature. This is why one does not find negated object quantifiers, stranded or otherwise, in the Romance languages, as shown in the following sentence from Spanish:

(192) *He visto a no todas las muchachas.
    (I) have seen to not all the girls

What is interesting here is that a negated object is possible in the Romance languages if it is topicalised, in other words, if it has passed through NegP on its way to the topicalisation position. The following Romanian sentence clearly demonstrates this:

(193) Nu pe toate fetele le-am văzut.
    not on all girls the them (I) have seen

This sentence provides even more evidence that a negated constituent in the Romance languages must pass through NegP.

The model in (186) also makes the correct predictions on Small Clauses in the Romance languages. In Section 2.5 evidence was presented from English that a Small Clause is truly like a full sentence because it can have a negated constituent in subject position. In the Romance languages, which differ from the Germanic languages because they contain NegP, we find the same evidence. That is, what looks like a direct object is actually a Small Clause subject that has been raised out of the Small Clause and into [SPEC, AgrOP] of the main clause. Consider the following Italian sentence:

(194) Considero non tutti gli studenti intelligenti.
    (I) consider not all the students intelligent

As already shown, negated direct objects do not appear in post-verbal position in the Romance languages. The grammaticality of (194) can be explained if one assumes that the direct object of the matrix verb is actually the subject of a Small Clause and that a Small Clause, like a full sentence, can contain a NegP. Just like a main clause subject, the subject of a Small Clause can move through NegP on its way to subject position and combine with Op $\neg$ to form a negated quantifier. Furthermore, if the
Small Clause subject moves to [SPEC, AgrOP] of the main clause, the model in (186), in combination with the Stranding Analysis, predicts that the negated quantifier can be stranded in the Small Clause. This prediction is borne out:

(195) Considero gli studenti non tutti intelligenti.
(I) consider the students not all intelligent

Finally, my model explains why in the Romance languages only a \([- > \forall]\) reading is possible in a sentence such as the following Italian one:

(196) I ragazzi non hanno tutti una bicicletta.
the children not have all a bicycle

The negation marker is not embedded in SPEC of vP or QP. It heads NegP and therefore takes scope over everything under it, including the quantifier.

6.2.5 Review of Section 6.2

In Section 6.2 I have attempted to answer four questions about differences between the Romance and Germanic languages in their handling of negated quantifiers. There were three theoretical foundations in my approach to these questions. First there were the arguments in Zeijlstra (2004) whereby negation is a functional category in the Romance languages but not the Germanic languages, meaning that the Romance languages have a highly situated NegP and that negation markers in these languages are syntactic heads rather than maximal projections. Secondly, we relied on a general constraint, also from Zeijlstra (2004), against moving universal quantification above negation, abbreviated \([*\forall R/Neg]\). Finally, we applied a model that I proposed in (186) based partially on Zeijlstra (2004) but also based on the claim that a feature like [uNeg] can be optional or non-lexical. While there are some issues with the model that I have proposed, it has a lot of explanatory power.

Having looked at the NegP languages, we can now take a look at how my model, again building on Zeijlstra (2004), might apply to non-NegP languages at the constituent level.

6.3. Non-NegP Languages

6.3.0 Introduction

Most of what I have to say about negated quantifiers in the Germanic languages has already been said in Sections 2 and 3. In those sections I offered an explanation for negated quantifier stranding in the Germanic languages by treating negation in those languages as a maximal projection located in a specifier position, following Zeijlstra (2004). I also explained inverse scope in the Germanic languages by proposing the Neg Stranding Hypothesis. There is still a residual matter to be discussed. It was
brought up in Section 6.1 and has to do with the following Dutch sentence, which is ambiguous for some speakers:

\[(197) \text{ iedereen loopt niet.} \]

everyone walks not

Zeijlstra explains the ambiguity of this sentence by appealing to his claim that in the Germanic languages negation markers and subjects are both specifiers and that their order can be reversed:

\[(198) \text{ a. } \begin{array}{c}
\text{ SPEC } \\
\text{ vP (negation marker)}
\end{array} \quad \text{ b. } \begin{array}{c}
\text{ SPEC } \\
\text{ vP (subject)}
\end{array} \]

\[(198) \text{ a. } \begin{array}{c}
\text{ SPEC } \\
\text{  vP (subject)}
\end{array} \quad \text{ b. } \begin{array}{c}
\text{ SPEC } \\
\text{  vP (negation marker)}
\end{array} \]

Zeijlstra says that the standard interpretation of (197), which is based on (198b), is the \([\forall > \neg]\) reading, with the meaning Nobody walks. A \([\neg > \forall]\) reading, which is based on (198a) and has the meaning Not everyone walks, is also possible, although this is a sub-standard reading. The fact that this reading is downgraded can very possibly be attributed to a violation of \([*\forall QR / Neg]\). Zeijlstra must still explain how the \([\neg > \forall]\) reading is possible given the \([\forall > \neg]\) word order. He does this by claiming that when the subject quantifier iedereen (everyone) moves over negation to subject position, only its syntactic and phonological features move, while its semantic features remain behind, thereby maintaining the desired scopal relations. There are four reasons why I do not believe that this is the correct analysis, which I will now elaborate on in the following sub-sections. I will show that rejecting (198b) and adopting my theory of constituent negation with Neg Stranding strengthens Zeijlstra’s theory.

6.3.1 Zeijlstra’s Structure in Sentences with Multiple Verbal Elements

My first argument against (198b) is that it works only in simplex sentences with just one verbal element. Imagine a sentence with three verbal elements, such as the following:

\[(199) \text{ All the students might not have read the book.} \]

If this sentence is an instance of sentential negation, the negation marker must be located in [SPEC, ModalP]:
Example (199) has two readings. In order to obtain the \( [\forall > \neg] \) reading within the framework of Zeijlstra (2004) one would have to start with a structure in which the subject is base-generated above negation, as it is in (198b). This would necessitate base-generating the subject in a second (higher) SPEC position in ModalP. However, this position is not a suitable base-position for subjects because a modal verb cannot assign a \( \theta \)-role. The subject must be base-generated in [SPEC, vP]. Zeijlstra would therefore have to derive both the \( [\forall > \neg] \) and the \( [\neg > \forall] \) reading of (199) from (200), which corresponds to (198a). This is feasible within Zeijlstra’s model, but not ideal. In order to get the \( [\forall > \neg] \) within Zeijlstra’s framework the subject QP would simply move across negation into subject position. This would constitute a violation of \( *[\forall QR/Neg] \), but a violation does not have to lead to ungrammaticality. It may only lead to markedness. In order to get the \( [\neg > \forall] \) reading, the subject QP would move across negation but only its syntactic and phonological features would move. Its semantic features would remain behind, and the \( [\neg > \forall] \) reading would be obtained. There will be more on this shortly. The point of this sub-section is that (198b) is of no use if there is more than one verbal element in a clause, assuming that auxiliaries and modals do not assign a \( \theta \)-role.

6.3.2 Co-occurrence of Sentential and Quantifier Negation

My second argument against (198b) is that there are sentences in which a \( [\neg > \forall] \) reading and a \( [\forall > \neg] \) reading occur at the same time:

\[(201) \] The students have not all not read the book.

This sentence shows that a theory of sentential negation must be supplemented with a theory of constituent negation. Otherwise, in order to account for the co-occurrence of a \( [\forall > \neg] \) and a \( [\neg > \forall] \) reading, one would have to apply (198a) and (198b) at the same time, which is impossible. Only one of the structures can be
correct, and this cannot be (198b), for reasons already mentioned. The best solution to this problem is to dispense with (198b) and to obtain a \([-\sim \forall]\) reading by base-generating the negation marker in QP.

6.3.3 Missed Generalisation

My third argument against (198b) is that it misses a generalisation. Remember that the distinction between (198a) and (198b) is used to explain the ambiguity of the following Dutch sentence:

\[(202) \text{ Iedereen loopt niet.} \quad \text{everyone walks not} \]

One of the readings of this sentence is the same as that of the following sentence:

\[(203) \text{ Niet iedereen loopt.} \quad \text{not everyone walks} \]

This sentence is an instance of constituent negation and is outside the scope of Zeijlstra (2004), but it is lexically and semantically the same as the \([-\sim \forall]\) reading of (202). In other words, both sentences are instances of constituent negation. The distinction between the structures in (198a) and (198b) does not account for this. The Neg Stranding Hypothesis does.

6.3.4 Partial Movement

My fourth and final reason for not following Zeijlstra’s manner of explaining the inverse scope seen in (199) and (202) was referred to in Section 6.3.1. It has been shown that the structure in (198b) is of no use. The point I want to make now is that even (198a) is only optimal for a sentential negation or \([\forall > \sim]\) reading because in order to obtain the \([-\sim \forall]\) reading in (199) and (202) from (198a) a partial movement solution is needed, that is, movement of syntactic and phonological features without semantic features. This kind of partial movement is totally unnecessary in the model that I have proposed. For example, for the \([\forall > \sim]\) reading of (199) I begin with (200), which is not incompatible with Zeijlstra’s (198a). For the \([-\sim \forall]\) reading I start with a structure in which the negation marker originates in [SPEC, QP] and is stranded there. This approach allows one to dispense with the problematic structure in (198b) and with partial movement, and it can account for structures with more than one verbal element.

To summarise Section 6.3, dispensing with the structure in (198b) and adding a theory of constituent negation in which the negation marker is base-generated in the SPEC position of a nominal phrase and can be stranded there is not incompatible with Zeijlstra’s overall theory and would in fact only strengthen it.
6.4 Open Question: Negated Objects in Germanic VO Languages

I end this section with an unsolved problem. I have hypothesised that in negated nominal constituents in the Germanic languages the negation marker is in the SPEC position of that constituent. I can think of no reason why there should be any constraints on which kinds of constituents can contain a negation marker in their SPEC position. In Sections 1.1 and 3.1 I showed that in the Germanic languages a negation marker can appear in the SPEC position not only of QP but of DP, PP and VP. Furthermore, I can think of no reason why subject constituents should be able to carry a negation marker in their specifier positions while object constituents should not. The following examples from German, which contain stranded and non-stranded negated object quantifiers, confirm my expectations:

(204)  

a. Der Student hat nicht alle die Bücher gelesen.  
    the student has not all the books read

b. Der Student hat die Bücher nicht alle gelesen.  
    the student has the books not all read

Unlike German, English poses a problem. In the stranding of negated subject quantifiers it behaves like German, not like the Romance languages:

(205)  

a. Die Studenten haben nicht alle das Buch gelesen.  
    the students have not all the book read

b. The students have not all read the book.

However, it does not allow the equivalents of the examples in (204), in which there are negated object quantifiers:

(206)  

a. *The student has read not all the books.  

b. *The student has read the books not all.

Example (206b) can be blocked by arguing, as I did in Section 6 of Chapter 2, that object quantifiers can only be stranded in scrambling languages. For (206a) there is no explanation. I mentioned in Section 2.1 of this chapter under example (43d) that there seems to be a problem in the Romance and Germanic languages when constituent negation appears lower than the position of sentential negation. This is easy to explain in the Romance languages. It is explained by the model that I proposed in Section 6.2. In the Germanic VO language English it remains an unexplained fact. That constituent negation must appear higher than sentential negation in the Germanic languages is evident from the following English and German examples:

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33 According to my informants, the same problem occurs in other VO Germanic languages such as Swedish, in which the structure in (206) is also impossible.
The idea that constituent negation markers cannot appear to the right of where sentential markers appear is mildly interesting but it is first of all purely descriptive and secondly un-tested cross-linguistically. There seems to be something about negated constituents in general, especially negated objects, that makes them require a contrastive setting. In fact, (206a) sounds much better if it is rephrased as follows:

(209) The student has read not all the books but some of them.

It is not clear why objects are under more pressure than subjects to appear in a contrastive context. It is also not clear why German, an OV language, does not require that a negated object appear in a contrastive setting.

The main subject of this chapter has been the stranding of negated quantifiers. The English sentence in (206a) raises a question that is even more basic than the issue of stranded negated quantifiers. It raises the question of how a negated quantifier is generated in the first place. More specifically, it raises the question of why English generates negated subject quantifiers but not negated object quantifiers. Suppose that one argued that in the Germanic languages the position occupied by sentential negation, even if no sentential marker is present, licenses constituent negation in some way that requires constituent negation to be raised to the sentential negation level for licensing. If no raising takes place, as in (206a), a derivation crashes. In the German examples in (204), the direct object, which is a negated QP, is scrambled above the sentential negation position and this licenses the negated objects. This approach is untenable for two reasons. First of all, it is tantamount to saying that Germanic negation markers sometimes bear a [uNeg] feature that needs checking. This would completely go against all the arguments presented in this chapter and in Zeijlstra (2004). Or, one would have to say that sentential negation markers in Germanic are different from constituent negation markers, the former bearing an [iNeg] feature and the latter bearing the feature [uNeg]. This is highly unlikely. However, I must point out that it is very interesting that an English sentence with a negated object improves if that object is fronted and thereby moved above the position of sentential negation:

(210) a. *Fate has blessed not all of your children.
    b. Not all of your children has fate blessed.

The (b) sentence sounds poetic. Thus, there does seem to be something to the idea that constituent negation must appear above the position of sentential negation.
Still one other possibility is that Focus plays a role. It has been argued, for example by Krifka (1998), that the preverbal position in German is a Focus position. Perhaps negation is in and of itself focalised. In an OV language, a negated object can appear preverbally. In a VO language like English a negated object in normal object position cannot be focalised. In (210b) the fronted object immediately precedes the verb and could be considered to be focalised or topicalised. The problem with this analysis is that it is not at all clear that an item must be in a preverbal position to be focalised in English. Krifka points out that English is free in assigning Focus, and that post-verbal positions are also available for focalisation. For the time being I am forced to leave this question for future research.

6.5 Synopsis of Section 6

In Section 6 I have proposed a model for negated quantifiers in the Romance languages with the goal of explaining certain differences between the Germanic and Romance languages in their handling of negated quantifiers pointed out in Section 5. My model has four theoretical foundations. The first of these is the assumption that the basic concepts in the theory of sentential negation in Zeijlstra (2004) regarding NegP and non-NegP languages are also applicable at the constituent negation level. The second foundation, also taken from Zeijlstra (2004), is that there is a principle whereby the movement of a universal quantifier across negation is marked. I suggested that this might have to do with the relative strength of negation with respect to universal quantification. The third foundation is the Neg Stranding Hypothesis, my idea that a negation marker can be stranded by itself in QP, and the fourth is the idea that in the Romance languages the feature [uNeg] is not necessarily inherent or lexical and that Op /¬ can be realised as the negation marker when it combines with a QP bearing the [uNeg] feature.

Although there are a lot of issues with the model that I have proposed for the Romance languages, it has a lot of advantages, such as offering a unified approach to sentential and constituent negation. It also makes a lot of correct predictions. By postulating that negated constituents in the Romance languages are formed when a constituent bearing a [uNeg] feature passes through NegP and combines with Op /¬, it correctly predicts that no negated constituents will be found below NegP, stranded or otherwise. Also, it correctly predicts that sentences in which a universal quantifier precedes a negation marker can be ambiguous in the Germanic languages but not the Romance languages because the Germanic languages can have a negation marker in the SPEC position of a nominal phrase or a verbal phrase while the Romance languages only have the option of placing negation in the head position of a highly positioned NegP.

The model that I proposed is unable to explain why negated direct objects cannot be generated in VO Germanic languages like English. There seems to be a requirement that constituent negation appear higher than the position of sentential negation, but this is merely an observation that is neither explanatory nor cross-linguistically tested.
7. Chapter Summary

This chapter has dealt with negated quantifiers within the framework of the Stranding Analysis that originated in Sportiche (1988) and has also presented several interesting issues in the study of negated quantifiers. In Section 1 we explored the concept of negated constituents in general and negated quantifiers in particular and demonstrated that quantifier negation is different from and independent of sentential negation and that a stranded negated quantifier is not simply a non-negated stranded quantifier that happens to fall under the scope of a sentential negation marker. In Section 2, the stranding of negated quantifiers was analysed in different languages and in a variety of different syntactic structures, including mono-clausal sentences, raising constructions, control structures, sentences involving A-bar movement, Small Clauses and sentences involving remnant movement and IPP constructions. The data could be accounted for within the framework of the Stranding Analysis.

In Section 3 we looked at the phenomenon in the West Germanic languages whereby $[\forall > \neg\forall]$ word order can result in a $[\neg\forall > \forall]$ reading. In order to explain this type of inverse scope I presented the Neg Stranding Hypothesis, according to which the negation marker in a negated constituent can be stranded inside that constituent. I pointed out that under the copy theory of movement one could claim that Neg Stranding involves reconstruction under A-movement. However, I argued that reconstruction under A-movement is a very unreliable means of resolving ambiguity and suggested that under Neg Stranding a stranded negation marker retains scope over the constituent that has stranded it without the need for reconstruction by virtue of its symmetric c-command relationship with the lowest trace of the stranding element. I proposed that this configuration enables a stranded negation marker to take scope over the entire A-chain of the moved element, and pointed out that a stranded quantifier or a stranded preposition have the same relationship to the constituent that has stranded them. I also provided evidence that even if one relies on A-movement reconstruction to explain inverse scope, the Neg Stranding Hypothesis is indispensable because constituent negation markers can in fact be stranded.

In Section 4 I presented various alternatives to the Neg Stranding Hypothesis, all of which turned out to be problematic. In Section 5 I introduced negated quantifiers in the Romance languages and pointed out several differences between the Romance languages and the Germanic languages in their handling of negated quantifiers. In Section 6 I presented my own model for quantifier negation in the Romance languages, which draws heavily on the theory of sentential negation in Zeijlstra (2004). There are some issues with this model, but by drawing on Zeijlstra (2004) it enables one to take a unified approach to constituent and sentential negation, it explains the differences between the Germanic and Romance languages noted in Section 5, and it makes a lot of correct predictions about the Romance languages, including the non-existence of negated constituents below NegP and the unavailability of inverse scope readings.
Chapter 3, Appendix: Constituent Negation and *Do*-Insertion

In Sections 1.2, 2.1 and 3.1 of Chapter 3 two interesting facts about English were revealed. First of all, *do*-insertion is necessary not only in sentential negation but also in certain cases of constituent negation. For example, the following sentence requires *do*-insertion regardless of whether it has a sentential or constituent negation reading:

(1) All boys do not like football.

Secondly, while both English and German allow the stranding of a quantifier in [SPEC, vP] when no auxiliary or modal is present, only German allows the stranding of a negated quantifier in this position. The following examples demonstrate this asymmetry between German and English:

(2) a. The students all read the book.
    b. *The students not all read the book.

(3) a. Die Studenten lasen alle das Buch.
    the students read all the book.
    b. Die Studenten lasen nicht alle das Buch.
    the students read not all the book.

The purpose of this appendix is to show that these two phenomena follow from the same rule, namely, the rule of *do*-insertion in English. I will begin with some observations and data.

There seems to be a general problem in English with forming any kind of negative constituent in the position occupied by *not all* in (2b):

(4) *The students not recently saw John.
(5) The students have not recently seen John.
(6) *The students not always come to class.
(7) The students have not always come to class.

Note that when the sentences are in the perfect tense, as in (5) and (7), they are grammatical. This is a strong indication that the problem with (4) and (6) is syntactic, not semantic. However, it is not immediately clear what the syntactic cause of this problem might be, because negation in (4) and (6) is in the same syntactic position as it is in (5) and (7). It is in a position adjoined to vP.

The reader may not yet be aware of it, but (4) and (5) are instances of sentential negation while (6) and (7) are cases of constituent negation. I will demonstrate this shortly. Assuming that (4) and (5) represent sentential negation and (6) and (7)
represent constituent negation, the reason for the ungrammaticality of (4) and (6) can easily be stated in unified terms:

(8) In instances of both sentential and constituent negation, a negation marker requires some kind of verbal support to its left, and if no auxiliary or modal is present to provide that support, *do*-insertion is required. This follows from the fact that English main verbs do not move around negation to T and AgrS the way they do in German. The three exceptions to this rule are topicalisation (*Not always does Mary sleep late*), contrastive phrases (*John gave a book not to Mary but to Jane*), and negated subject QPs (*Not all the students have read the book*). Note that all three of these exceptions are related to some kind of focus or topicalisation.

It follows that examples (4) and (6) can be corrected by inserting *do*:

(9) The students did not recently see John.
(10) The students do not always come to class.

Sentences (5) and (7) do not require *do*-insertion because there is an auxiliary to the left of v that can support negation. The rule in (8) also explains why *do* must be inserted in both readings of (1).

I will now explain why I claim that (4) and (5) represent sentential negation while (6) and (7) are instances of constituent negation.

Adverbs like *recently* do not invite negation unless there is a contrast. This is illustrated in the following sentences:

(11) The students saw John recently.
(12) *The students saw John not recently.
(13) The students saw John not recently but two years ago.

Sentence (12) is ungrammatical because it contains constituent negation with no contrast. This indicates that (5), which does not have a contrastive meaning but is nonetheless grammatical, involves sentential negation, not negation of the adverb. This, in turn, indicates that (4) must also be an example of sentential negation, since the only difference between (4) and (5) is tense.

Unlike *recently*, the adverb *always*, perhaps by virtue of its universality, is compatible with negation without contrast. This allows it to be negated as a constituent and topicalised:

(14) Not always has Mary loved John.
(15) *Not recently has Mary visited John.*
What this shows is that (6) is ungrammatical not because of a lack of contrast but because *not* is in vP without support to its left, and *do*-insertion is required, as shown in (10).

Incidentally, note that (7) and (10) are definitely cases of constituent (adverb) negation, since they can be paraphrased as follows:

(16) Not always have the students come to class.
(17) Not always do the students come to class.

One complication, which was pointed out in Section 2.1 of Chapter 3 under example (37b), is the fact that there are cases when modals do not move to T and AgrS in English. This allows quantifier stranding in [SPEC, TP] or [SPEC, ModalP]:

(18) The children all may have been watching the movie.

This sentence becomes ungrammatical if the quantifier is negated, because the negation marker has no support to its left:

(19) *The children not all may have been watching the movie.

*Do*-insertion cannot save this sentence because it cannot occur in the presence of a modal or auxiliary.

The phenomenon of *do*-insertion has always been attributed to the fact that main verbs do not move to T and AgrS in English. The dummy verb *do* is thus necessary in cases of subject-auxiliary inversion. It is also necessary in cases of negation because the negation marker needs something to its left. But, one might ask, why should a negation marker in English need support to its left? After all, such support is not necessary in subordinate clauses in the other West Germanic languages Dutch and German:

(20) …dat de studenten niet zijn gekomen.
    that the students not are come

(21) …dass die Studenten nicht gekommen sind.
    that the students not are come

I would like to suggest that *do*-insertion is needed in the case of negation in English because English speakers have the option of cliticising the negation marker and a clitic needs support. A dummy verb is inserted because the clitic negation marker *n’t* cannot be attached to a nominal:

(22) a. She loves me, she loves me not.
    b. *She loves me, she loves men’t.*
To summarise, the two phenomena introduced at the beginning of this appendix can both be attributed to the fact that a negation marker in English needs verbal support to its left, whether it is a constituent or a sentential negation marker. This ends the discussion of *do*-insertion.