Negation Raising

Negation Raising:
Logical Form and Linguistic Variation

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CAMBRIDGE
SCHOLARS
PUBLISHING

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This book first published 2010

Cambridge Scholars Publishing

12 Back Chapman Street, Newcastle upon Tyne, NE6 2XX, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-4438-2506-9, ISBN (13): 978-1-4438-2506-1

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PREFACE

Some years ago, I planned to work on language acquisition and my attention was captured by an early construction which is sometime reported in the speech of two-year-old children: it has been sporadically noticed that children initially use negation in the first clausal position. I thought that this option could belong to set of UG possibilities and the next step was to observe the range of variation of clausal negation in Language. This was literary the end of the original language acquisition project and the beginning of this book.

From the observation of a sufficiently large linguistic sample, it is evident that the expression of sentential negation is variable. Some languages, such as Irish, have negative complementizers, while others, like French, double the negative maker and still others, such as some Romance dialects, present an adverb at the lower edge of the VP. Given this state of affairs, it is largely unclear whether these differences affect the interpretive properties of the negative markers.

There are two possibilities: either the link between Logical Form and Phonological Form is isomorphic, or it is not, and a mapping operation is required. In the first case, which I consider to be the null hypothesis, we expect that logic scope will be determined by the surface position occupied by the negative maker. Throughout the course of this book, I will attempt to falsify this hypothesis.

I suggest that an indirect link exists between LF and PF and the two levels of representation are mediated by a syntactic operation which I call “LF Negation Raising”.

The first step is to define where, exactly, is the position of negative makers, disentangling the many factors which complicate the analysis. In chapter one, I will try to isolate the parameters of variation which are directly related to the clausal position of NegP. In the second chapter, I will extend the analysis from the inflectional system to the complementizer layer. On the basis of the data presented in the first two chapters, I will draw a cartography of sentential negative markers. By including non-Romance varieties and the complementizer’s layer, this book will integrate and extend the work of Zanuttini (1997).

The second essential step toward the falsification of the “isomorphic hypothesis” is to determine the scope of the different negative markers.

Cinque (1999) empirically showed that the structural position of modality is fixed. In the same way, it seems that also its scope is invariable and tied to its surface structure. Given this fixity, we have a privileged point of observation for the scope of negation. It is possible for us to observe the scope interaction between the sentential negative markers and modal verbs: if PF-LF mapping is direct, low negative markers will allow only narrow scope readings under modality.

In chapter three, I will consider the scope of negative markers in this light, showing that inverse scope is relatively easy to obtain and that the scope of negation is not tied to its surface syntactic position. An operation as LF Negation Raising has to be allowed. In chapter four I will propose the existence of a link with the complementizer's system.

The final issue which will be examined in the last two chapters concerns negation in the nominal domain and some consequences on the treatment of *negative concord* readings. The main contribution of chapter five will be to present a set of peculiar phenomena related to negative quantifiers in post verbal positions. The asymmetries between preverbal and postverbal positions of negative quantifiers in *non concord languages* shares relevant similarities with *n*-words in *asymmetric negative concord* languages. I will suggest that the distribution of *n*-words and the behavior of VP internal negative quantifiers can be reduced to the same constraint, which is only differently modulated in asymmetric concord languages.

The final chapter closes the book by considering several issues related to NPIs and Negation Raising. Some apparent problems can be solved by adopting a semantic analysis of NPI along the lines suggested by Kadmon and Landman (1993) and further refined in Chierchia (2004).

This monograph is based on my Ph.D. dissertation and it extends that work in many directions, although the core idea remains the same.

Parts of this book have been previously presented elsewhere. The operation of LF-Negation Raising was presented at the 33rd Incontro di Grammatica Generativa (Bologna, 2007) and the main data on Germanic languages were discussed at the 34th Linguistiktagung (2006, Klagenfurt). A seminal work on downward entailing particles in the Italian complementizer was presented at the 31st conference of the Società Italiana di Glottologia (2005, Scuola Normale Superiore, Pisa). During these moments, I received many insightful comments and my gratitude goes out to the audiences in attendance.

However, the most interesting discussions related to this work took place in more informal occasions, especially with the members of the CISCL at the University of Siena during winter seminars and spring

lunches. Thanks to Adriana Belletti, Valentina Bianchi and Cecilia Poletto for discussing with me some of the ideas in this book.

I am very indebted, for his helpful comments, to Luigi Rizzi, who followed this work from the earliest stages and to my PhD thesis committee: thanks to Liliane Haegeman, Carlo Cecchetto, Günther Grewendorf and Ian Roberts. The improvements from the 2006 version are mainly due to their revisions.

List of Abbreviations

1	first person
2	second person
3	third person
Acc	accusative case
Agr	agreement
Asp	aspect
Aux	auxiliary
Cl	clitic pronoun
Comp	complementizer
Cont	continuative
D	determiner
Decl	declarative
Deon	deontic
DN	double negation
Ep	Epistemic
Foc	focus
Fut	future
I	interpretable
Inf	non-finite
Irr	irrealis
Man	manner
Mod	modality
N	noun
Neg	negation
Nom	nominative case
Non.*x*	lack of the *x* feature
O.cl	object clitic
Obj	object
OP	operator
P	plural
Past	past
PPast	past participle
Pres	present
Q	question
Real	realis
S	singular
S.cl	subject clitic
Su	subjunctive
Subj	subject
T	tense
Top	topic
Val	valued
Vol	volitional

CHAPTER ONE

PARAMETERS AND CROSS-LINGUISTIC VARIATIONS IN THE SYNTAX OF NEGATIVE MARKERS

Introduction: parameters and variations

As in any aspect of cross-linguistic comparison, also the syntax of negation presents a constellation of different constructions. Many of these variations, however, can be considered to be only the reflexes of other syntactic factors. If we assume here that a great, but limited, number of parameters is responsible for language variation, a preliminary issue concerns the nature of the parameters which directly relate to the syntax of negation.

Since parameters interact between them like different genes interact to create different phenotypes, it is not easy to individuate and isolate specific parameters as it is not easy to detect the role of single genes. In abstract terms, an ideal parameter will be a syntactic key feature, possibly with a binary value, which directly affects only a specific component of grammar, even if cascade effects have to be expected in other places as well. Being firmly aware of this difficulty, let me begin by considering a first possible classification of the languages of the world in relation to the means they have to convey a negative meaning.

A first, basic difference is in the particle used to signal negation. Early typological studies as Dahl (1979) and Payne (1985) classified languages by distinguishing three main strategies in accordance to the kind of negative element adopted. This can be an affix, a free particle or a dedicated verbal form as a negative auxiliary. Although this is a fundamental distinction, things are more complicate. The choice and the position of negative morphemes, for example, clearly obey to the interactive dynamic of inflection.

In a more recent survey, Miestamo (2005) makes further distinctions and he considers the effects that the presence of a negative operator has on the expression of categories as Tense, Aspect and Mood. As it is easy to

imagine, what emerges is an intricate scenario of complex interactions. At this point, a first possibility is to descriptively account for the differences postulating a specific parameter for each of them. However, some are clearly the byproduct of more general syntactic features, not directly related to the expression of negation.

In order to show how two different parameters might interact, consider for example the formation of negative sentence in English:

(1) a. I (*not) read (*not)
b. I don't read
c. I can't read

Example (1) shows that a lexical verb cannot support negation (1a) and that the presence of an auxiliary is obligatory (1b-c) even in simple tenses. Consider now a language as Italian. Here the negative affix might be hosted both by lexical verbs in simple tenses (2a) and by auxiliaries in complex tenses as *passato prossimo* (2b)

(2) a. Io non leggo
I neg read-1s-pres
'I don't read'

b. Io non ho letto
I neg aux-1s read-pastpart
'I didn't read'

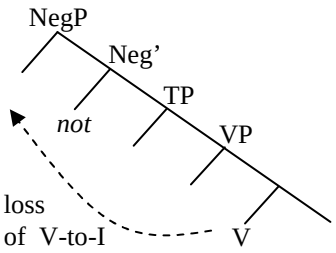
The difference between (1) and (2) shows that in Italian the auxiliary is not required in negative clauses. We could account for this in two ways: the first is to focus on the syntax of negation, and say that the two languages differentiate for the capacity that the negative affix has to incorporate on lexical verbs. The second is to relate the difference to the properties of Italian lexical verbs.

If we choose the first hypothesis, we could assume that the syntax of negative affixes must include a parameter which specifies the kind of host. Something like [+/- lexical verb] is encoded. However, there are good reasons to believe that this distinction is epiphenomenal: a mere consequence of some deeper variation. We have indication of that if we consider a diachronic change occurred in the passage from Middle English to Modern English around the middle of the 16th century. In fact, Middle English was similar to contemporary Italian in that the negative affix *ne* could appear directly on the lexical verb (van Kemenade 1999)

(3) He *ne* andwyrde ðam wife æt fruman
'He didn't answer the woman at first' ÆcHom.ii.110.33

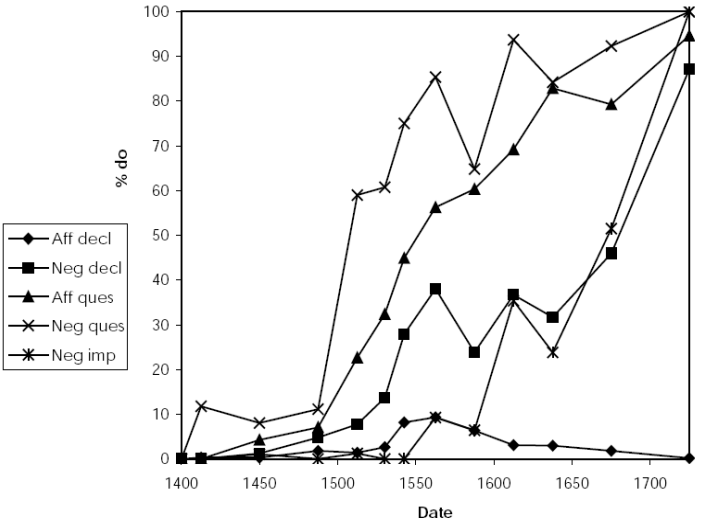
Successively, at least two important syntactic changes happened. The first was the lost of V-to-I movement, occurred around the middle of the 16th century (Roberts 2007; Kroch 1989). The second was a gradual change in the morpho-syntactic status of negation, which through different stages, became the particle *not*. At around the same time when English lost V-to-I movement (van Kemenade 2000), *not* was a syntactic head in a functional projection NegP immediately dominating the Tense Phrase

(4)



At this stage, what happened was that once the verb lost his ability to raise higher in the structure, *not* was still needing an host. A possible rescue strategy to satisfy the need of the negative affixal head was the insertion of an auxiliary, able to reach NegP in the course of the derivation. This is exactly what happened in the transition from Middle English to Modern English and *do* support began to be consistently attested in questions, negative declaratives and negative imperatives. The gradual emergence of *do* in these environments is shown in the figure below.

Fig.1. Percent of *do* forms in various sentence types (from Ellegård 1953)



In the course of the 16th century, *do-support* was almost obligatory in negative questions, when the verb was required to move up to the complementizer, soon followed by negative declarative.

The fragment in (5), reported in van Kemenade (2000) shows that at an earlier stage *not* could move together with the auxiliary *dyd* to C, confirming the fact that it was a syntactic head which moved together with the auxiliary

(5) Dyd *not* I send unto yow one Mowntayne that ...? (Mowntayne.210)

At this stage, both lexical verbs and auxiliaries could transit trough NegP. However, when lexical verbs definitively lose V-to-I movement, negation always required the presence of an auxiliary, as in present day English.

Once we took this snapshot of the events changing the English grammar in the 16th century, it is evident that the parameter 'host of the negative affix' [+/- lexical verb] can be decomposed into two different parameters: a parameter regulating the morpho-syntactic status of the negative marker and a different parameter regulating the movement of lexical verbs.

1.2. NegP and the X-bar schema in diachronic change

The examples given in (1) and (2) from Italian and English show that, even in the case of languages whose grammar is well-known and documented, it is hard to isolate grammatical parameters which might be directly related to the syntax of negation. For this reason, we must be guided by some theoretical assumption on the status of parameters. If we intend a parameter as a variation related to functional projections via lexical items (Borer 1984, Kayne 2005), then a good candidate is the morpho-syntactic status of the sentential negative marker.

This element will be marked as [+/- affixal], fitting the distinction between negative affixes and negative adverbials already made in Dahl (1979) and Payne (1985).

We may look again at some changes occurred in the syntax of English, in order to demonstrate that variations along this dimension are not related to other general changes. If we consider the period of around 1000 years, from the 7th to the 17th century, we observe an interesting oscillation. By observing the cyclic grammaticalizations of negative markers, which swung between free morpheme/affix, Otto Jespersen proposed the existence of a syntactic cycle which affects the morpho-syntax of negation. In the heroic poem *Beowulf*, there is trace of a sentence initial negative marker, not incorporated to the verb, as shown by the following examples[1]:

(6) *No* he wiht fram me flodyþum feor fleotan meahte, hraþor on holme
neg he thing from me on waves far swim could, quicker in water
'In no way could he swim far from me on the waves of the flood'

(7) *No* ic fram him wolde
neg I from him wanted
'I would not consent to leave him'

At this stage, the free particle *no* was not the sole negative marker and it probably coexisted with the affix *ne*. This latter element soon replaced *no*, becoming the only negative marker in the Old English prose of 9th and 10th century:

[1] The cycle has been well documented in van Kemenade (2000).

(8) *Ne* sende se deofol ða fyr of heofenum, þeah þe hit ufan come
neg sent the devil then fire from heaven though that it from-above came
'The devil sent not fire from heaven, though it came from above'
ÆCHom.i.6.13

In the course of two centuries, English underwent to a gradual change in the form of its sentential negative marker: from a sentence initial free particle to a verbal affix.

The cycle went on and in the passage from Old English to Middle English, the affix *ne* was coupled with a second negator *na*, appearing in a lower clausal position:

(9) þonne *ne* miht þu *na* þæt mot ut ateon of ðæs mannes eagan
then neg could you not the speck out draw of man's eye
'then you could not draw the speck out of man's eye'
ÆHomP.XIII.153

in (9) the particle *na* is separated from the verb, confirming that this element was an adverbial particle.

The successive development in the Middle English period is primarily characterized by the ongoing weakening of ne and the transformation of the reinforcing negator *na* to some spelling variant of *not*

(10) I *ne* may *nat* denye it
I neg may neg deny it
'I may not deny it' CMBOETH,435.C1.262

(11) ac of hem *ne* speke ic *noht*
but of them neg spoke I neg
'but I did not speak of them' CMTRINIT,95.1271

The passage from an affix to an adverbial sentential negative marker was finally completed after the 14th century, when *not* or some of its allomorphs became the only sentential negative marker:

(12) He yaf *nat* of that text a pulled hen
He gave neg of that text a pulled hen
'He didn't give a thing about that text' CMROLLTR,43.880

(13) I know *nat* the cause
I know neg the cause
'I do not know the cause' CMMALORY,627.3550

All these successive stages are well captured through a quantitative analysis of the Middle English corpora given in Wallage (2008) and summarized in Table 1:

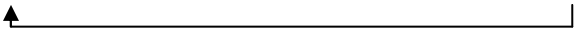
Table 1. Distribution of ne, ne...not, not. From 1150AD to 1500AD.

Period	ne	%	Ne...not	%	not	%
1150-1250	436	60.5	277	38.5	7	1.0
1250-1350	166	22.9	490	67.7	68	9.4
1350-1420	43	1.9	236	10.5	1959	87.5
1420-1500	14	0.8	18	1.0	1842	98.2
Total	660	16.3	1021	20.7	3876	63.0

Although it is impossible to draw a precise border between the different stages, we can clearly individuate at least three passages between the middle of the 12th century and the end of the 16th century. First, in the beginning of this period, *ne* was the only negator and it appeared as an affix on the verb. Second, in the following two centuries *ne*, gradually weakened and a second negative element as *noht/nat* appeared. Third, in the final stage around the 15th century, this second element became the sole negative marker, substituting the morpheme *ne*.

This cycle (Jespersen 1917) can be found in many other languages (Dutch, Zeijlstra 2004; German, Jäger 2008; French, Roberts 2007) and it might capture variations in both directions: from affixes to free morphemes and vice-versa:

(14) affix → free morpheme + affix → free morpheme

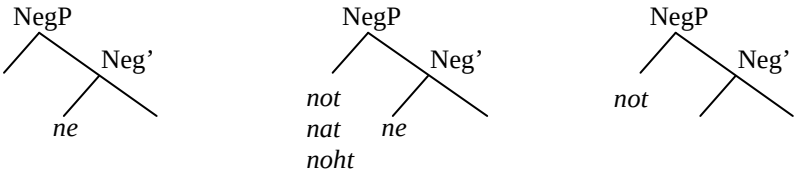


This cyclic change supports the idea that all the variations are placed on a single dimension and that only one parameter is responsible for a long cycle of fluctuations.

A way to express this parameter is to assume that a NegP may host both an adverbial specifier and an affixal head. The idea of a dedicated functional projection goes back to Pollock (1989) and the cycle can be captured by the three structural changes presented in (15):

(15) Jespersen's cycle in Middle English

Stage 1:	Stage 2:	Stage 3:
1150-1250 a.c.	1250-1350 a.c.	1350-1500 a.c.



The variation here is restricted within a single functional head, and the lexical elements only minimally vary with regard to the dimension [+/- head]. In addition, given the existence of the Stage 2, we need to say something else for the simultaneous presence of two negative markers.

Assuming that parameters only have binary values, we can account for the Jespersen's cycle with the following two parameters:

(16) Negation is signaled by an overt adverbial in the specifier or a bound morpheme in the head of NegP.

(17) Both the specifier and the head positions of NegP may be phonologically realized.

These two parameters capture the three different main stages of the Jespersen's cycle and, as I will try to show in the next section, have a great empirical coverage also in relation to synchronic variations.

1.3. Parameters and typology

How good is the cross-linguistic coverage of the two parameters given in (16) and (17)? We could try to assess it by looking at typological data.
I'll make first some further assumptions with regard to NegP, assuming that functional projections are unique and cannot be duplicated[2]. This is the same as saying that each functional projection may express one and only one feature. We have than a very strong prediction: if there is only

[2] This is compatible with a cartographic approach to clausal representation (Cinque and Rizzi 2008).

one NegP in the clause expressing a plain negative meaning, we could find at most one negative element of the same kind, being it an affix or a functional head. If we consider the diachronic variations described through the Jespersen's cycle, they can be well captured by assuming only one functional NegP. The question is whether we can find two elements with the same meaning and of the same kind in other languages. In this case, we must assume the presence of more than one NegP.

In order to determine this, we must look at a relevant sample of the world languages. The following discussion will be based on the extensive typological survey in Miestamo (2003, 2005). He considered a sample of 297 languages, whose majority expresses sentential negation using only one element, being it a free morpheme or an affix (258 languages on 297). This means that the parameter in (16) covers the 86.9% of the sample.

What remains is a group of 39 languages, which adopt *composite negation*. Here sentential negation is expressed by more than one element. This is not unexpected since NegP might host both an adverbial and a functional element, as in the Stage 2 of the Jespersen's Cycle.

Almost all the languages of this group uses two elements of a different kind, being one a free morpheme and the other an affix. Such cases, which can be captured by the parameter in (17) can be observed also in some languages of Europe, as French and West Flemish (Haegeman 1995):

(18) Jean *ne* vient *pas* (French)
Jean neg come.3s neg
'Jean does not come'

(19) Da ze *nie* ketent me euren kado *en*-was (West Flemish)
that she neg contented with her present neg-was
'That she was not pleased with her present'

Languages belonging to this group are similar to 13th century Middle English, with a composite negation formed by an affix (*ne* in French and *en* in West Flemish) plus a free morpheme (*pas* in French and *nie* in West Flemish). Given that affixes arguably occupy the head of NegP and free morphemes its specifier, this kind of composite negation might be captured by assuming a single NegP, compatibly with (17).

It seems that by combining the two parameters in (16) and (17), we can capture a wide range of languages by assuming only a single Negative Projection in the clause structure and the following generalization largely holds:

(20) In the clause, only one NegP is phonologically realized.

However, there are a few recalcitrant cases and I'll briefly discuss some of them. In Bafut, a Niger-Congo language, negation is duplicated by a two particles, *Kāā* and *sɨ̀*:

(21) *Kāā* mbɨ̀ŋ *sɨ̀* lōò (Bafut, Chumbow & Tamanji 1994)
neg rain neg fall
'It has not rained'

both *Kāā* and *sɨ̀* have to be considered as free particles, apparently forcing us to assume the presence of a second NegP. However, an important fact is that
Kāā is optional, a fact which suggests that it can be considered to be a reinforcer or an element carrying presuppositional meaning (Horn 1989).

Moreover, the duplication of negative markers can be generated by complex interactions with other functional categories. Seiler (1985) showed that in Imonda what apparently looks as a second negative element is instead the expression of an irrealis feature. If we look at sentences as (22), the two elements *së* and *–m* could be considered, at first sight, as two negative particles:

(22) Ehe *së* eg-l-uagl-f-*me* Imonda (Seiler 1985)
3 neg follow-obj-p-go-pres-neg/Q
'He does not follow them'

However, once we have more data at hand, this intuition turns to be wrong. In fact, if we consider also interrogative clauses, we find the same suffix *–m*

(23) Ne uagl-f-me
2 go-pres-neg/Q
'Are you going?'

Under a closer scrutiny then, the apparent composite negation in Imonda can be decomposed in a combination of *+irrealis* and *+negation*, two different features arguably hosted by two different functional heads[3].

[3] The only cases which appear to be really problematic in the set of languages discussed in Miestamo (2003, 2005) come from Maricopa and Maranungku. Here two negative elements, two affixes in Maricopa and two free morphemes in Maranungku, seem to express exactly the same meaning and they are both

A word also deserves to be spent on languages with more than two negative markers. It is not impossible to find languages where an extremely articulated form of negation is expressed by multiple elements. Zanuttini (1997) reports the following example taken from Parry (1997), relative to the Italian dialect of Cairo Montenotte, spoken in Liguria:

(24) Dy'menika u *(*n*)e pa 'vny*nu* (Cairese)
Sunday s.cl neg-is neg come-neg
'He didn't come on Sunday'

Sentence in (24) appears extremely repetitive and we find three negative elements: the affix on the copula *n-*, the adverbial *pa* and the suffix *–nu*. However, this redundancy is only apparent. In fact Parry suggests that the three elements absolve to different functions: while the first *–n* is obligatory, the other two are optional and enrich the meaning of the sentence in different ways. The element *pa* carries a presuppositional meaning while *–nu* is used as a reinforcer.

On the basis of this discussion, it seems that the generalization in (20) is substantially valid and that the two parameters in (16) and (17) are adequate not only to capture major syntactic changes in a diachronic dimension, but also to cover a wide range of synchronic differences. From the examples discusses up to now it emerges another important difference, and it regards the structural position where the negative element appears: clearly, the distinction between affixes and free particles is not sufficient to account for the clausal distribution of the sentential negative marker. In order to deal with this, we must consider the relation between NegP and the other functional projections.

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obligatory.Maricopa is a native American language spoken in Arizona, which allows the presence of two negative affixes, *waly* and *ma*:

(1) *waly*-puy-*ma*-k (Maricopa, Gordon 1986)
neg-die-neg-R
'He didn't die'

In Maranungku instead, a Norhtern Australian language, more than one negative adverb might be present at the same time:

(2) *piya* ka-nga-ni *way* (Maranungku, Tryon 1970)
neg non.fut-1s-go neg
'I am not going'

The presence of languages of this kind seems to argue in favor of the possibility to have more than one NegP in the clause structure, both expressing the same meaning. We should be aware of the existence of these languages, but their rarity (2 on 297 languages, less than 1%) and the relative paucity of the available data do not seems sufficient, for the moment, to abandon the generalization in (20).

1.4. Negation and the inflectional system

We know that languages express negation in different clausal position and this is certainly a key difference. Even languages belonging to the same family and spoken in the same area, might vary in the position where the sentential negative marker is realized. This point has been well illustrated for a small group of Italian dialects reported in Zanuttini (1997).
Under the assumption that adverbs do not move unless topicalized, she considered the relative order between negation and other adverbs expressing aspect, habituality and other event modifications. Limiting the discussion to the three adverbials *already, no more* and *always* in Standard Italian and in two Northern Italian dialects as Piedmontese and Milanese, we have the following liner order (see also Cinque 1999)

(25)

Italian:	già	>	più	>	sempre
Piedmontese:	gia	>	pi nen	>	sempre
Milanese:	gemò	>	pü	>	semper
	'already'		*'no more'*		*'always'*

thus in Italian *già* 'already' precedes *più* 'no more' and this, in turn, precedes *sempre* 'always'. This order, which can be easily determined by observing the position that the three adverbs occupy when they appear within the same clause, is respected also in the two other varieties[4].
Now, consider the position of the negative marker in Piedmontese and Milanese in relation to the adverbials in (25). In Piedmontese the sentential negative marker *nen* is an adverbial and it occupies a position between *gia 'always'* (26) and *sempre 'always'* (27)

(26) A l' avia *gia* *nen* salutami cul di la (Piedmontese)
s.cl s.cl'aux already neg greeted-me that day there
'Already on that day he had not greeted me'

(27) A l' ha *nen* dine *sempre* tut (Piedmontese)
s.cl scl'aux neg told-us always everything
'He hasn't always told us everything'

The example (27) also shows that *nen* precedes not only the adverbial *sempre*, but also the past participle *dine*. If we recast the linear order in

[4] The inverse order is forbidden or prosodically marked.

terms of structural dominance, we have an indication that in Piedmontese the following order holds: NegP > Past-Part P > Habitual P.

This order, however, is partially reversed in Milanese. Negation is expressed by the postverbal adverbial *no*[5] and this particle occupies a position immediately above the VP, linearly to the right of the past participle:

(28) El l' ha *scrivuu no* (Milanese)
s.cl. s.cl'aux written neg
'He hasn't written'

Consider that Past Participle in Milanese occupies a very low structural position and it is arguably lower than in Piedmontese, since it follows the habitual adverb *semper*:

(29) L' ha *semper di* tüscòs (Milanese)
s.cl'aux always said all
'He has always said everything'

In this vaiety, negation seems to be lower both than aspectual adverbs and past participle. This is confirmed by the following example where *no* follows the two elements:

(30) L' a *semper pagà no* i tas (Milanese)
s.cl'aux always paid neg the taxes
'It's always been the case that he hasn't paid taxes'

On the basis of these considerations, we have two different orders of functional projections:

(31) Piedmontese: NegP > Past-Part P > Habitual P
Milanese: Habitual P > NegP > Past-Part P

The differences between Milanese and Piedmontese shows that while it is possible to find a strict correspondence in the order of adverbials in different languages (Cinque 1999), the position of negative adverbs resist to a cross-linguistic generalization.

[5] In Milanese there is also another negative marker, the adverbial *minga* which has a presuppositional meaning (see Zanuttini 1997).

This conclusion is also supported if we consider not only the ordering of adverbs, but also the ordering of affixes. Ouhalla (1990) reports the following difference between Turkish and Berber, two rich agglutinating languages:

(32) Jan elmarlar-i ser-*me*-di-∅ (Turkish)
John apples-acc like-neg-past-agr
'John didn't like apples'

(33) *Ur*-ad-y-xdel Mohand dudsha (Berber)
neg-fut-agr-arrive Mohand tomorrow
'Mohand won't arrive tomorrow'

While in Turkish (32) the particle *–me* is closer to the verbal root than the tense morpheme *–di*, the inverse happens in Berber. In fact, in the Berber example (33), the tense particle *–ad* is closer to the root than the negative marker *ur-*.
If we assume (Baker 1985) that the order of morphemes reflects the ordering of functional heads, the examples in (32) and (33) argue in favour of a different ordering between NegP and TP in the two languages:

(34) Turkish: AgrP > TenseP > *NegP* > VP
Berber: *NegP* > TenseP > AgrP > VP

The problem is that the comparison between (32) and (33) may be misleading for various reasons. First, it is not obvious that past and future tenses are hosted by the same functional projection. Second, while the Turkish verbal morphology illustrated in (32) shows a series of suffixes, Berber instead uses a sequence of prefixes.

Although these considerations may weaken his conclusions, I believe that the argument presented by Ouhalla has a substantial validity. We only have to find better examples. Again, a typological survey might help us to find languages with the appropriate characteristics. Miestamo (2003) reports some data on Malayalam, a Dravidian language which is one of the official languages of India, spoken in the state of Kerala. Malayalam has two different suffixes for negation and past, with the past morpheme closer to the verbal root

(35) Avan paṯhi-c-*illa* (Malayalam)
he study-past-neg
'He did not study'

This order of suffixation may be captured if we assume that the morpheme expressing past is hosted in a functional head closer to the VP while *-illa* is hosted in an higher NegP. Malayalam then show the order NegP > PastP which is reversed from Turkish:

(36) Turkish: AgrP > PastP > *NegP* > VP
Malayalam*:* *NegP* > PastP > VP

In this case we compared two series of suffixes and we also considered the order of two morphemes expressing the same tense, overcoming the drawbacks of Ouhalla original comparison.

We may push the comparison even further, and consider other tense morphemes as well. If we consider present tense, the inverse order between negation and present tense morphology is shown by two South-Central American languages, Barasano and Kuna. Barasano is spoken in Southern Colombia while Kuna in the northern part of the country, at the border with Panama. Consider the order of suffixed in (37) and (38)

(37) Wa-*be*-a-ha yʉ (Barasano)
move-neg-pres-non.3p 1s
'I am not going'

(38) an pinsa-e-*suli* (Kuna)
1s remember-pres-neg
'I don't remember'

the order of negative suffixes in Barasano and Kuna, with the negative affix more internal in the first case, suggests again that the position of NegP is variable:

(39) Barasano: PersonP > PresP > *NegP* > VP
Kuna: *NegP* > PresP > VP

Finally, let me also consider the relation between future and negative morphemes. Miestamo reports data from Inanwatan (de Vries 1996) and Tonkawa (Hoijer 1993), two languages with a sequence of distinct suffixes for negation and future tense.
Inanwatan, spoken in Indonesia and North West Papua, negates the clause with the suffix *–aigo*, which can be optionally preceded by the particle *náwo*. Example (40) shows that the morpheme *–aigo* follows the future morpheme

(40) *(náwo)* né-se-sa-*aigo* (Inanwatan)
neg 1s-walk-fut-neg
'I will not walk'

The opposite ordering is instead found in the Native North American language Tonkawa, documented by Henry Hoijer:

(41) Yaˈloˈn-ab-aˈdo-no-'c (Tonkawa)
kill-neg-fut-cont-1s
'I will not kill him'

Again, by looking at the sequence of affixes, we have another cross-linguistic difference for what concerns the ordering of projections:

(42) Inanwatan: *NegP* > FutP > VP
Tonkawa: PersonP > Continuative P > FutP > *NegP*

In conclusion, the comparison between all the previous couple of examples supports Ouhalla's original idea that the position of the NegP is variable across languages.
We have then converging evidence both from the order of adverbials and affixal morphology showing that there is no fixed position for NegP cross-linguisitcally. This is a remarkable exception, since other inflectional projections are instead rigidly ordered in accordance to the articulated hierarchy in (43):

(43) [*frankly*Mood-speech act [*fortunately* Mood-evaluative [*allegedly* Moodevidential [*probably* Mod-epistemic [*once* T(Past) [*then*T(Future) [*perhaps* Mood-irrealis [*necessarily* Mod-necessity [*possibly* Modpossibility [*usually* Asp-habitual [*again* Asp-repetitive (I) [*often* Aspfrequentative(I) [*intentionally* Mod-volitional [*quickly* Asp-celerative(I) [*already* T(Anterior) [*no longer* Asp-terminative [*still* Asp-continuative [*always* Asp-perfect [*just* Asp-retrospective [*soon* Asp-proximative [*briefly* Asp-durative [*characteristically* Asp-generic/progressive [*almost* Asp-prospective [*completely* Asp-SgCompletive(I) [*tutto* Asp-PlCompletive [*well* Voice [*fast/early* Asp-celerative(II) [*again* Asprepetitive(II) [*often* Asp-frequentative (II) [*completely* Asp-SgCompletive(II)

(Cinque 1999)

As we saw in the pairs Turkish/Malayalam (36), Barasano/Kuna (39) and Inanwatan/Tonkawa (42), NegP occupies a variable position cross

linguistically. In principle, it seems that it may appear between any of the projections in (43). In order to express the fact that language differentiates with respect to the position where they realize the NegP, we may assume that this functional projection varies within the functional space above the VP

(44) NegP c-commands XP or is c-commanded by XP where XP is any of the functional projections immediately dominating VP

The parameter in (44), as stated, only indicates the lower limit (VP) where NegP could be realized. I take this move since we are not yet in a position allowing us to determine the upper bound of NegP, having not considered the complementizer layer.

In fact, additional functional projections, related to the complementizer, can be individuated on the top of the hierarchy in (43) and nothing excludes that negation can be instantiated by complementizer's particles. In the next chapter, I'll try to extend the range of cross-linguistic variation in order to include also languages with negative complementizers.