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A Unified Syntax of Negation

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To *moeke* and *vake*

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Karen De Clercq

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Nederlandse samenvatting –Summary in Dutch–

Dit proefschrift brengt een geünificeerde syntactische benadering voor wat zinsnegatie (ZN) en constituentnegatie (CN) wordt genoemd. Ik betoog dat een negatieve markeerder, die vaak als een ondeelbare eenheid wordt gezien, kan opgedeeld worden in vier sub-atomische basiscomponenten of kenmerken die elk bereik hebben in een andere positie in de zin. Negatie wordt onder deze benadering een complexe predikaatsoperator.

Inhoudelijk bestaat het proefschrift uit vier luiken. In het eerste luik geef ik een inleiding en schets ik de theoretische achtergrond. In het tweede luik wordt de interne syntaxis van negatie besproken en in het derde luik kijk ik hoe die interne syntaxis de externe syntaxis van negatie bepaalt. In het vierde luik bespreek ik ondersteunende argumenten voor het voorstel en breid ik het ook uit.

De empirische aanleiding tot de opdeling van een negatief morfeem in subatomische basisdelen is de observatie dat er in sommige talen syncretismen zijn tussen markeerders voor zinsnegatie en markeerders voor constituentnegatie. Vanuit nanosyntactisch perspectief zijn syncretismepatronen betekenisvol. Ze duiden namelijk op verborgen of onderliggende structuur. De onderzoekshypothese in dit proefschrift is dus dat er binnen het domein van negatie dergelijke betekenisvolle syncretismen aanwezig zijn.

Om op een systematische wijze syncretismen te kunnen opsporen moet er een notie zijn van welke soorten negatieve markeerders er bestaan. Op basis van vier eigenschappen, namelijk 1) het bereik van de negatieve markeerder, 2) de mogelijkheid met andere markeerders te combineren, 3) de semantische waarde en 4) de functie, deel ik negatieve markeerders op in vier types: negatieve polariteitsmarkeerders (Pol^{Neg}), focusmarkeerders (Foc^{Neg}), graadsmarkeerders (Deg^{Neg}) en kwantiteitsmarkeerders (Q^{Neg}).

Aan de hand van deze vier types worden negatieve markeerders in negen verschillende talen onder de loep genomen. Dit onderzoek leidt tot de observatie dat er inderdaad syncretismen zijn binnen het domein van negatie. Vanuit deze observatie wordt het negatief morfeem, dat nu als een verzameling van alle negatieve markeer-

ders wordt beschouwd, opgesplitst in zijn sub-atomische basiscomponenten of kenmerken: N1, N2, N3, N4. Vanuit nanosyntactisch oogpunt beantwoordt elk kenmerk aan een syntactisch hoofd. Bijgevolg wordt de negatieve markeerder opgesplitst in vier syntactisch hoofden die hiërarchische gestructureerd worden in een binaire nanostructuur. Ik betoog dat deze nanostructuur als een complexe constituent in de specificeerder van een abstract semantisch interpreteerbaar hoofd voor negatie thuis hoort, kortom in SpecNegP.

In het tweede luik van de dissertatie wordt aan de hand van de opbouw van de negatieve nanostructuur en aan de hand van reconstructie-effecten beargumenteerd dat deze NegP gegenereerd wordt op een lexicaal predicaat. Met andere woorden wordt betoogd dat negatie een predikaatsoperator is, eerder dan een zinsoperator en dat in de specificeerder van deze operator de kenmerken voor negatieve markeerders zitten. Die kenmerken in de nanostructuur zijn negatief bij gratie van het semantische negatieve hoofd. Zelf markeren ze het bereik van de negatie. Het zijn dus eerder bereiksmarkeerders dan negators.

In het vervolg van de dissertatie leg ik uit hoe de verschillende negatieve basiscomponenten en markeerders vanuit de lage predikaatspositie bereik kunnen nemen in verschillende posities. De vier posities voor negatieve markeerders die ik onderscheid zijn: PolP, FocP, DegP en QP.

Vervolgens ontwerp ik een formeel kenmerkensysteem dat toelaat om de basiscomponenten in de negatieve nanostructuur te laten interageren met de vier bereiksposities voor negatie. Het kenmerken systeem wordt gestuurd door valuatie. Er wordt ook vanuit het ontwikkelde systeem aangetoond dat oninterpreteerbare maar gevalueerde kenmerken niet gecheckt moeten worden in de syntaxis, maar gewoon kunnen worden geschrapt. Checken of niet checken leidt echter tot interpretatieverschillen.

In een afsluitend deel bespreek ik hoe interventie-effecten van kwantificationele adverbia en het Engelse modale hulpwerkwoord *must* het voorstel binnen dit proefschrift ondersteunen. Verder breid ik het voorstel ook uit en bespreek ik aan de hand van zinsnegatie in het Frans hoe het in dit proefschrift voorgestelde systeem adequaat diachrone ontwikkelingen voor negatie kan ondervangen.

English summary

This dissertation develops a unified syntax for what is often called sentence negation (SN) and constituent negation (CN). I argue that a negative marker, which is usually considered an indivisible unit, can be decomposed into four subatomic features, which can each take scope in a different position in the clause. Under this approach negation is viewed as a complex predicate negator.

This dissertation consists of four parts. The first part introduces the topic and the empirical domain and provides the necessary theoretical background. In the second part the internal syntax of negation is investigated and the third part focusses on how the link between the internal syntax and the external syntax of negation can be established. The final part provides support for the account and extends the proposal.

The empirical trigger for the decomposition of the negative marker into subatomic features is the observation that there are syncretisms between markers expressing SN and markers expressing CN in some languages. From a nanosyntactic perspective syncretism patterns are meaningful. They point to hidden or underlying structure within a unit that is thought of as indivisible. The research hypothesis in this dissertation is therefore that there meaningful syncretism patterns within the domain of negative markers.

In order to be able to detect syncretisms it is necessary to know which types of negative markers there are. On the basis of four properties of negative markers, namely 1) their scope, 2) their ability to stack on other negative markers, 3) their semantic label and 4) their function, a classification of four types of negative marker is made. I distinguish negative polarity markers (Pol^{Neg}), focus markers (Foc^{Neg}), degree markers (Deg^{Neg}) and quantity markers (Q^{Neg}).

By means of this four-way classification I look at nine different languages and I detect syncretism patterns within the domain of negative markers. Starting from this observation, the negative marker which is now considered the set of all negative markers, can be decomposed into its subatomic features: N1, N2, N3, N4. From a nanosyntactic perspective every feature corresponds to a syntactic head. This leads to the hierarchical organization of these four features into a binary negative nanospine. I furthermore argue that this negative nanospine is inserted as a complex constituent in the specifier of an abstract semantically negative head, more precisely SpecNegP.

On the basis of the negative nanospine and reconstruction effects I argue in the next part that NegP is base-generated on a lexical predicate. Negation is thus perceived of as a predicate negator rather than a propositional negator, which can have four negative features in its specifier. These negative markers determine the scope of the abstract negator, but are themselves not semantically negative. They are negative scope markers rather than negators.

Furthermore I explain how the features in the nanospine take scope in the positions in the clause. The four positions in the clause that I distinguish for negative scope are PolP, FocP, DegP and QP. I develop a valuation-driven feature system which allows interactions between the markers in the nanospine and the clausal scope projections. The account provides support for a feature system which allows uninterpretable but valued features to be deleted without checking. Checking or not checking leads to interpretative differences.

In a final part I discuss how intervention effects caused by the modal auxiliary *must* and quantificational adverbs provide support for the proposal developed in this dissertation. I extend the proposal to French negation and I show how the system can capture diachronic change.

Part I

Introduction and theoretical background

1 Introduction

1.1 Sentence vs. constituent negation

This dissertation develops a unified syntax for negation. More particularly, it proposes a unified account for the differences and similarities between 'sentence negation', as in (1a), (henceforth SN) and 'constituent negation' (henceforth CN) (Klima 1964), as in (2), within one syntactic system.[1]

(1) a. She isn't happy.
    b. She is not happy.

(2) a. She is unhappy.
    b. She is dishonest.
    c. She is non-Christian.

Klima (1964:261-270) discussed some diagnostics to test the scope of negation, i.e. to test whether negation takes the entire clause in its scope or whether it takes only 'a constituent' in its scope.

The main diagnostics for the scope of negation are the question tag-test, (3), the *either/ too*-test, (4), and the *neither/so*-test, (5).[2] The tests show that constituent nega-

[1] Jespersen (1917) refers to this distinction as 'nexal negation' versus 'special negation' and Horn (1989), following the tradition by Aristotle, refers to the distinction as 'predicate denial' versus 'predicate (term)' negation. I come back to these distinctions in chapter 3.

[2] McCawley (1998:604-612) provides an interesting overview of some of the tests that were first introduced by Klima (1964). He provides a discussion of the differences between them and the problems

tion in (3c)-(4c)-(5c) patterns with affirmative sentences, given in (3a)–(4a)–(5a) and not with negative sentences in (3b)–(4b)–(5b).

(3) a. Hoboken is in New Jersey, *is it/ isn't it?
b. Hoboken isn't in Pennsylvania, is it/ *isn't it? (McCawley 1998:611
c. John is unhappy, *is he/ isn't he?

(4) a. John voted for Bergland, and Mary voted for him too/*either.
b. John didn't vote for Reagan, and Mary didn't vote for him *too/either. (McCawley 1998:604)
c. John's spouse is non-Christian, and Jim's spouse is non-Christian too/*either.

(5) a. John voted for Stassen, and so/*neither did Mary.
b. John didn't vote for Stassen, and *so/ neither did Mary. (McCawley 1998:609)
c. John is dishonest and so/*neither is Mary.

These tests make a distinction between negative markers that give rise to SN and those which give rise to CN.[3]

However, there is also evidence suggesting that the seemingly fundamental distinction between SN and CN may not be so fundamental at all. This appears when we look at the licensing of negative polarity items (NPIs): both SN and CN markers are able to license NPIs in certain syntactic contexts.[4] Both the sentential negative marker *n't*, (6a), and the negative affix *un-*, (6b), are able to license the NPI *any* in certain syntactic configurations.

(6) a. He won't be able to find any time for that.
b. He is unable to find any time for that. (Klima 1964:291)
c. Unaware of any dangers he went on vacation. (Zeijlstra 2004:46)

I take these facts to show that there is no fundamental distinction between SN and CN, and that a common system underlies both. In this dissertation I provide more evidence for this claim.

related to the tests. Question tags are discussed in more detail in chapter 8.

[3]I use the word 'negative marker' throughout this dissertation to refer to markers which negate predicates, irrespective of whether 1) they are morphologically simplex or complex, 2) morphologically free or bound, 3) affixal, infixal or circumfixal and 4) whether they give rise to sentence negation or constituent negation. However, 'negative marker' does not refer to negative polarity items, negative quantifiers or negative indefinites in this dissertation.

[4]It is beyond the scope of this dissertation to go deeper into NPIs. I refer the reader to the literature on NPI-licensing and negative contexts for an overview (Ladusaw 1979, Horn 1989, Zwarts 1992, 1995, 1998, Giannakidou 1997, 1998, Gajewski 2011, Brandtler 2012).

1.2 Research questions and claims

The dissertation consists of four parts: an introductory part, a part in which I discuss the internal syntax of negation, a part focussing on the external syntax of negation and a final part with support and extensions. The discussion in this section focuses on the two main components of the dissertation: the internal and external syntax of negation.

1.2.1 Internal syntax of negation

This dissertation starts from a hitherto undiscussed parallel between CN and SN: the existence of syncretisms in the negative markers expressing CN and SN. Whereas CN in English can be expressed by affixal negative markers like *un*, *iN-*, *dis-* and *non-* and SN is expressed by *not* or the clitic *n't*, in Czech CN and SN are all expressed by means of the same negative marker *ne-*, (7).

(7) a. Ja ne- jsem šťastný.
I neg- am happy.
'I am not happy.'
b. Ja jsem ne- šťastný.
I am neg- happy.
'I am unhappy.'

Within the group of English affixal negative markers (*un-*, *iN-*, *dis-* and *non-*) it has long been observed that *non-* does not give rise to the same type of negation as *un-* (Zimmer 1964, Horn 1989, Kjellmer 2005). Whereas *non-*, in (8a) indicates that someone is simply not an American, *un-* in (8b) expresses that her behavior is unworthy of an American. I discuss this contrast in detail in 3.2.4.

(8) a. She is non-American.
b. Her behavior is un-American.

However, in Czech this contrast is not morphologically marked, as illustrated in (9).

(9) Je ne- americký.
is neg American
'He is un-American.'
'He is non-American.'

It thus seems that there are different types of negation and that the division between these types is invisible in some languages (like Czech), but not in others (like English).

Within nanosyntax syncretisms are considered surface indications of hidden layers of syntactic structure within what is normally considered an indivisible unit, the morpheme. A morpheme can thus be decomposed into its subatomic features on the

basis of syncretism patterns. This has been applied to case by Caha (2009) and Starke (2011b).

This nanosyntactic perspective to syncretisms leads to the following empirical research questions, which I shall try to address in this dissertation:

(10) a. Which types of negative markers are there?
b. Which criteria lie at the basis of the classification?
c. Which syncretism patterns can be detected between these types of negative markers across languages?

Based on four properties I propose a taxonomy of negative markers that distinguishes four different types: negative polarity (Pol^{Neg}) markers, negative focus (Foc^{Neg}) markers, negative degree (Deg^{Neg}) markers and negative quantity (Q^{Neg}) markers. This four-way classification is the starting point of a cross-linguistic comparison of nine languages with respect to the syncretisms for these four types of negative markers. Within a sample of nine languages I detect six different syncretism patterns. Following the nanosyntactic tenet that syncretisms point to hidden layers of structure, the next research question is:

(11) Which hidden structure do these syncretisms point to?

I propose that a negative marker can be decomposed into four subatomic features which are represented by the four syntactic heads N1, N2, N3 and N4. These heads are hierarchically organized and inserted as a complex phrase in the specifier of a NegP. I show how these features account for the observed syncretism patterns.

The main claim with respect to the internal syntax of negation is thus that all features for the four different types of negative markers are assembled in a negative nanospine, which is located in the specifier of a NegP.

1.2.2 External syntax of negation

Building on the syncretism patterns and the related proposal for a negative nanospine, the other main part of the dissertation aims at establishing the link between the internal syntax of negation and clausal syntax. Therefore, I set out to answer the following two questions:

(12) a. What is the position of the negative nanospine in the clausal spine?
b. How do the negative markers/features in the nanospine end up in different positions in the clause?

On the basis of the structure of the nanospine and reconstruction effects I claim that the NegP which contains the nanospine in its specifier is base-generated at the level of the predicate: it is located on top of the main lexical predicate AP in an adjectival

copular clause, irrespective of whether the negative features in its specifier will give rise to constituent negation or to sentence negation. The head of this predicate NegP is semantically negative and interpretable, but phonologically empty. I take negation to be a complex operator at the predicate level.

I furthermore propose that there are four scope projections for negation in the clausal spine, which correspond to the four features in the nanospine: a QP, DegP, FocP and PolP. The features in the nanospine can take scope in one of these projections. Negative markers are thus viewed as scope markers for a semantic predicate negation. The interaction between the scope features in the nanospine and their scope positions in the clausal spine happens via Agree. The feature system I use is valuation driven. I provide evidence for the claim that uninterpretable valued features do not always need to be checked before they get deleted. Absence of checking leads to interpretative differences, but not to ungrammaticality.

The analysis of the internal and external syntax of negation receives support from intervention effects in the final part of the dissertation. I show how sentential negative polarity (SNP) always involves Agree between a complex nanospine and a Pol-probe in the clausal spine. Q-adverbs and necessity modals can block SNP and intervene in this Agree relationship. Finally, I show how the proposal developed in this dissertation is able to capture diachronic change by discussing the evolution from bipartite negation in French to present-day spoken French.

1.3 Outline of the dissertation

The dissertation consists of four parts: Part I is an introductory part, Part II discusses the internal syntax of negation, Part III discusses the external syntax of negation and Part IV presents support for the proposal and extends the proposal.

Part I: Introduction and theoretical background

Chapter 1 is this introduction. In Chapter 2 I introduce the theoretical background: the nanosyntactic framework (Starke 2009). It serves as my main tool to capture contiguous syncretism patterns in the domain of negative markers.

Part II: The internal syntax of negation

In Chapter 3 I propose a four-way classification of negative markers in copular clauses: Pol^{Neg}-markers, Foc^{Neg}-markers, Deg^{Neg}-markers and Q^{Neg}-markers. The classification is based on four properties of negative markers: their scope and related to that their ability to stack or co-occur with other negative markers, their semantic properties and their function. I discuss these four types of negative markers for nine

different languages in terms of six different syncretism patterns that I detected.

In Chapter 4 I apply the nanosyntactic framework to the domain of negative markers on the basis of the contiguous syncretism patterns. I capture the syncretisms by means of a decomposition of the negative morpheme into four subatomic features. These subatomic features are hierarchically structured into a negative nanospine, which is located in the specifier of a NegP with a phonologically empty negative head.

Part III: The external syntax of negation

In Chapter 5 I claim on the basis of the structure of the negative nanospine and reconstruction effects that NegP is base-generated low in the clausal spine, on the (adjectival) predicate. NegP is a complex predicate negator.

In Chapter 6 I introduce the negation related projections in the clausal spine in which the subatomic negative features take scope. I argue that these Neg-related projections are scope positions for negation and I discuss these projections with respect to the syntactic literature on negation.

In Chapter 7 I develop a feature system which captures the interaction between the subatomic features in the nanospine and the Neg-related projections in the clause in terms of Agree. The feature system is valuation driven and allows uninterpretable valued features to delete without checking (Bošković 2009, 2011). The Neg-related projections in the clausal spine function as probes which Agree with the corresponding features in the nanospine, thus allowing the predicate negator to take scope.

Part IV: Support and extensions

Chapter 8 discusses two instances of intervention which support the account developed in this dissertation. By means of the question tag test I show that Q-adverbs and the necessity root modal *must* intervene in the Agree relation between a Pol-probe and negative features in the nanospine and block sentential negative polarity.

In Chapter 9 I discuss sentential negation in French in terms of nanosyntax and I show how the proposal can capture the diachronic change of negative markers, also known as Jespersen's cycle.

Chapter 10 concludes and discusses avenues for further research.

2

Theoretical Background: Nanosyntax

2.1 Introduction

Nanosyntax (henceforth NS; Starke 2009, 2011a,b, Caha 2009, Pantcheva 2009, 2011, Fabregas 2009, Taraldsen 2012) is a Late Insertion theory[1] that finds its origins in the cartographic framework (Cinque 1999, Rizzi 1997, Kayne and Pollock 2001, Cinque 2010, Cinque and Rizzi 2010, Shlonsky 2010). The cartographic research topic is to provide a detailed structural map of natural language syntax (Cinque and Rizzi 2008:42).

The main idea underlying Late Insertion theories is that lexical items are inserted post-syntactically, after Merge (Chomsky 1995) has created syntactic structure with bundles of morphosyntactic features.

Within nanosyntax these syntactic terminals that Merge operates on are very small: they can even be submorphemic. As a consequence of Late Insertion the functions or features that were traditionally attributed to the lexicon are now distributed amongst other components of the grammar: most importantly to the syntactic component in nanosyntax.[2]

[1] The theory was proposed in lectures by Michal Starke and was further developed by students and senior researchers at Tromsø University. Most of the ideas in this chapter are based on a lecture series given by Michal Starke at Ghent University in November 2011, Starke (2009, 2011b), Caha (2009) and Fabregas (2009).

[2] In this respect NS is like Distributed Morphology (henceforth DM) (Halle and Marantz 1993, Harley and Noyer 1999). I refer the reader to the aforementioned references for an introduction to DM. I will only focus on NS in this introduction.

As a of consequence of the submorphemic nature of the building blocks of syntax, spell out is phrasal.[3] It is 'only after some steps of derivation that a constituent large enough to correspond to a morpheme is created' (Starke 2011b:4): this morpheme is thus a phrasal constituent.

Spell out is rigidly cyclic: at every node, after every application of Merge, spell out is mandatory. The spell out domain in nanosyntax is thus very small, even smaller than in approaches which are considered to take a rigidly cyclic approach to spell out, like Epstein and Seely (2002), Bošković (2002, 2005), Müller (2004), who argue that spell out domains or phases are not bigger than a phrase.[4]

An ideal domain to study submorphemic features and the relevance of phrasal spell out is a domain in which syncretisms can be observed. Syncretisms can be looked at as a mismatch between syntactic structure and the lexicon (Fabregas 2009): there is only one lexical item but it corresponds to more than one syntactic representation and therefore consists of more than one feature. Caha (2009:6) calls them a 'surface conflation of two different underlying morphosyntactic structures'. In line with Jakobson (1962), Caha (2009:17) argues that 'syncretism points to the existence of a hidden level of linguistic organization inside an apparently indivisible unit: the morpheme'. Put differently, whenever a morpheme has multiple readings, the claim will be that those readings are structurally different and by virtue of the fact that they are realized in the same morpheme, that they are structurally related.[5]

In order to understand the internal linguistic organization of syncretic morphemes, it is crucial to understand the restrictions on syncretisms. One domain in which syncretisms are prevalent and in which the restrictions on syncretisms have been studied is the domain of case (Baerman et al. 2005, Caha 2009, Baerman and Brown 2011).

In the following section I explain what the restrictions on syncretisms are and how these restrictions play a role in the organisation of the internal structure of a morpheme. In section 2.3 I then explain the core principles of nanosyntax by applying them to case morphemes (Caha 2009). This all will serve as a preparation for chapters 3 and 4, where I apply the nanosyntactic approach to negative markers.

2.2 Syncretisms

In order to illustrate how the restrictions on syncretisms determine the structural internal organisation of a morpheme I look at an example from Modern Greek, discussed in Caha (2009:6–7).

[3] Cf. McCawley (1968), Weerman and Evers-Vermeul (2002), Neeleman and Szendröi (2007) for non-nanosyntactic implementations of phrasal spell out.

[4] These approaches differ from approaches which take vP and CP as spell out domains or phases, cf. Chomsky (1995, 2001).

[5] Of course, lexically homophonous words, like Dutch *bank* which can both mean 'bench' and 'bank' are not considered here.

(1) a. o anthrop-os
the.nom human-nom
'the man'

b. t-on anthrop-o
the-acc human-acc
'the man'

c. t-u anthrop-u
the-gen human-gen
'the man'

The paradigm in 2.1 (adapted after Caha (2009)) shows three Greek declension classes in the singular and one in the plural. The table shows that syncretisms are possible between NOM and ACC in the plural of *maxit* 'figher', i.e. *maxites*, and between ACC and GEN in the singular, i.e. *maxiti*. With respect to *álpha*, there is only one form for NOM, ACC and GEN singular. The word class of *anthropos* 'human' is completely non-syncretic for NOM, ACC and GEN singular. Crucially, there is no word class which shows a syncretism between NOM and GEN that does not also include ACC.

	maxit	**maxit**	**anthropos**	**álpha**
	fighter pl	fighter sg	human	álpha sg
NOM	maxit-es	maxit-i-s	anthropos	álpha
ACC	maxit-es	maxit-i-Ø	anthropo	álpha
GEN	maxit-on	maxit-i-Ø	anthropu	álpha

Table 2.1: Case syncretisms in Modern Greek

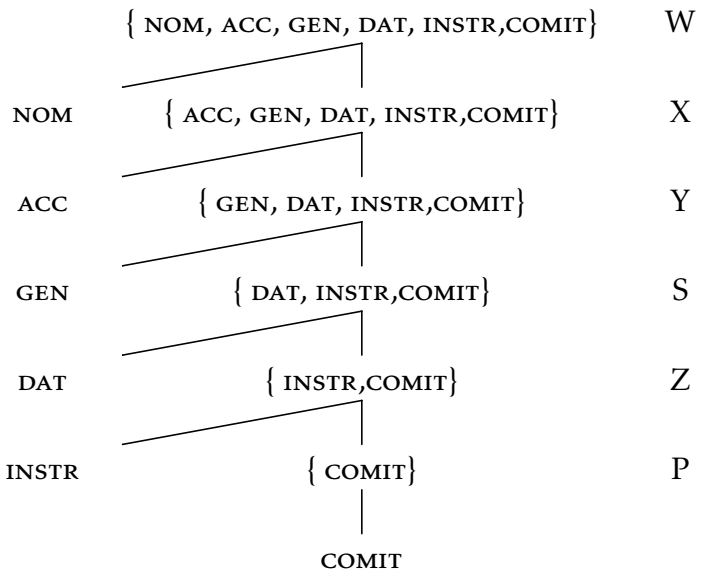
Cross-linguistic research on syncretisms in the domain of case morphemes (Blake (1994), Baerman et al. (2005), Caha (2009), Baerman and Brown (2011) has led to the case sequence in (2). The sequence shows how case can be ordered on the basis of the available syncretisms: a language will not be syncretic for nominative and comitative without also being syncretic for all intermediate case-layers.

(2) The Case sequence:
nominative - accusative - genitive - dative - instrumental - comitative (Caha 2009:10)

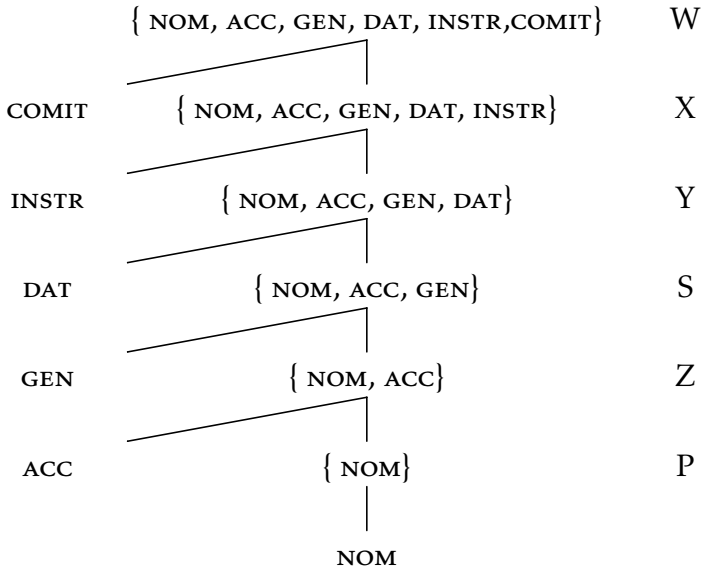
Caha (2009) argues that the sequence based on the existing syncretisms points to structural contiguity: NOM is structurally closer to ACC than to GEN and so forth. Structural contiguity and thus the syncretisms between cases can be captured if we decompose case in its syntactic primitives. This decomposition can be achieved by 'subclassification' (Caha 2009:20–21). This means that all cases in the sequence are considered part of one set of cases. We call this set *W* (Caha 2009:20). When the first case of the sequence is branched off from the set *W*, a new set *X* arises, and so on. Two sub-classifications can me made, depending on whether we start splitting off NOM, (3),

from the set of all cases or COMIT, (4).

(3)



(4)



The next step is a 'cumulative classification'(Caha 2009:21). Each case is classified in terms of the number of sets it belongs to. For the decomposition in (3) the cumulative classification is in (5). For (4) it is in (6).

(5) a. W = NOM
b. W, X = ACC
c. W, X, Y = GEN
d. W, X, Y, S = DAT
e. W, X, Y, S, Z = INSTR
f. W, X, Y, S, Z, P = COMIT

(6) a. W = COMIT
b. W, X = INSTR

c. W, X, Y = DAT
d. W, X, Y, S = GEN
e. W, X, Y, S, Z = ACC
f. W, X, Y, S, Z, P = NOM

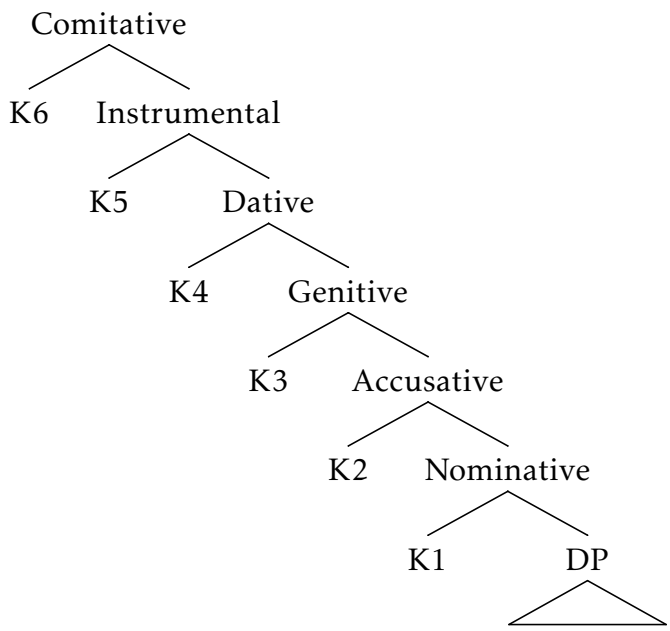
If a case belongs to different sets, it could be said to consist of different distinctive features. A case that does not belong to certain sets, lacks these distinctive features. In (10) and (11) the letters representing the sets have been replaced by case feature: K1, K2, K3, …. Again I present the decomposition for both possible directions of the case sequence.

(7) a. K1 = NOM
b. K1 + K2 = ACC
c. K1 + K2 + K3 = GEN
d. K1 + K2 + K3 + K4 = DAT
e. K1 + K2 + K3 + K4 + K5 = INSTR
f. K1 + K2 + K3 + K4 + K5 + K6 = COMIT

(8) a. K1 = COMIT
b. K1 + K2 = INSTR
c. K1 + K2 + K3 = DAT
d. K1 + K2 + K3 + K4 = GEN
e. K1 + K2 + K3 + K4 + K5 = ACC
f. K1 + K2 + K3 + K4 + K5 + K6 = NOM

In line with nanosyntactic assumptions, each of these Kx features is a syntactic head. The features are organised in terms of binary branching trees. Caha proposes what he calls the Split K, a hierarchically organized 'case tree' in which case is split up in different case layers, each instantiating a syntactic feature (K1, K2, K3, …) as in (9). Even though decomposition and sub-classification are theoretically possible in both directions, Caha (2009) gives ample cross-linguistic evidence that NOM is the smallest case in the case tree and consequently also the lowest. So the decomposition in (3) and the cumulative classification in (5) are confirmed to be correct by cross-linguistic data.

(9)



An interesting consequence of the decomposition of case and the structure in (9) is that it implies that there are structural containment relations between the different cases: nominative case is contained within accusative case, nominative and accusative within genitive case etc. Caha (2009:37) proposes the Universal Case Containment Hypothesis which also includes the Universal Case Contiguity Hypothesis:

(10) Universal Case Containment:

a. In the case sequence, the marking of cases on the right can morphologically contain cases on the left, but not the other way round.

b. The case sequence: NOM–ACC–GEN–DAT–INS–COM
(Caha 2009:37)

Morphological evidence for these hypotheses comes — amongst others —from case compounding[6], a pattern in which one case is associated with what seem to be two case morphemes, as illustrated in table 2.2. In West-Tocharian the GEN case form comprises two morphemes: *-ts* and *-em*, with *-ts* following *-em* . The latter morpheme is the morpheme for ACC, suggesting that ACC morpheme is actually contained within GEN, or, put differently, that the genitive is an augmented accusative.

Summarizing, when one wants to account for the syncretism patterns in the case domain, then case needs to be decomposed in submorphemic features. Consequently, NOM, ACC or GEN are no longer labels for one morpheme, but they are labels or umbrella

[6]Caha (2009:69) distinguishes between case stacking (cf. also Richards (2007)) and case compounding. In case stacking a noun bears multiple case markers expressing multiple case dependencies, whereas in compounding there is only one dependency relation expressed. This difference will also become relevant for negation: there is negation compounding (also called negative doubling, cf. chapter 9) and negation stacking (also called double negation, cf. chapter 3).

	horse.pl	**man.pl**
NOM	yakw-i	enkw-i
ACC	yakw-em	enkw-em
GEN	yakw-em-ts	enkw-em-ts

Table 2.2: West-Tocharian case compounding, (Caha 2009:69)

terms for a phrasal constituent which consists of several submorphemic hierarchically structured features. Phrasal spell out necessarily follows from this perspective on language: if one morpheme consists of several submorphemic features then only lexical insertion at the level of the phrase - and not at the level of terminals - can eventually lead to the output of a morpheme. I discuss phrasal spell out and other core principles of nanosyntax in the next section.

2.3 The core principles

In this section I illustrate by means of a concrete example how phrasal spell out and Lexical Insertion work within nanosyntax. I introduce the core nanosyntactic priciples whilst discussing the example.

The data I use to explain the main nanosyntactic tenets are in table 2.3. The table presents four case forms of the N *jabolk* 'apple' in Slovene (Caha 2009, Starke 2011a). NOM and ACC are syncretic.

NOM	jabolk-o
ACC	jabolk-o
GEN	jabolk-a
DAT	jabolk-u

Table 2.3: Slovene *jabolk*, 'apple' (Starke 2011a, Caha 2009:240)

The way these case endings are stored in the lexicon is shown in (11). Apart from phonological information and encyclopaedic or conceptual information, all LIs contain a lexical tree.[7] This is an immediate consequence of the fact that nanosyntax is a Late Insertion model and that the lexicon is post-syntactic: only after syntactic Merge takes place in syntax can there be Lexical Insertion.

(11) Lexical items

a. </jabolk/, [N*]>

b. </o/, [K2 [K1]], ACC>

[7] I use labelled brackets here for the lexical trees for reasons of space. For the phonological information I use regular spelling and not IPA in these examples. The conceptual information I restrict to the usual label for the highest case layer.

c. </a/, [K3 [K2 [K1]]], GEN>
d. </u/, [K4 [K3 [K2 [K1]]]], DAT>

The lexicon of Slovene thus contains an entry for the 'root' N*, *jabolk*, (11a).[8] It also contains an entry for the case suffix *-o*. Due to the fact that NOM and ACC and syncretic, there is only one LI for both NOM and ACC. The LI for GEN is (11c) and the LI for DAT is (11d).

Observe that the lexical trees in (11b)–(11d) differ from (11a) in that they do not contain N*. Put differently, there is no lexical tree corresponding to *jabolko* or *jabolka*, but there is a tree for *jabolk* and there is a tree for *o* and for *a*.

When syntax merges N*[9], then — due to rigid cyclicity — the syntactic structure is checked against the lexicon. The lexicon contains a LI with a matching Lexical Tree, (11a), thus N* can be spelled out *jabolk*.

When the first feature of the case spine, K1, is merged, generating the syntactic tree, cf. (14)a, then again the syntactic tree is checked against the lexicon, (11). However, the syntactic structure cannot be spelled out, since there is no LI matching the structure in (14)a. Therefore, spell out driven movement applies. Spell out driven Movement only comes in if Merge fails to lead to spell out. N* thus moves to a specifier position slightly above the newly merged head without leaving a trace, (14)b. [10]

After movement has applied, the new structure is again checked against the lexicon. At first sight, there is again no LI which is a perfect match for the syntactic structure. However, there is a lexical item, (11b), which consists of a lexical tree which is the superset of the syntactic tree. By the matching principle in (12), which is informally called the *Superset Principle*, the syntactic structure can be spelled out: the lexical tree is bigger than the syntactic tree and thus contains the syntactic tree.

(12) A lexically stored tree matches a syntactic node iff the lexically stored tree contains the syntactic node. (Starke 2009:3)

The Superset Principle follows naturally in a theory that wants to account for syn-

[8] * stands for all necessary functional material in between the root and the case layers. I assume for now that the root is spelled out without recourse to movement, simply by matching with the relevant LI.

[9] Van Craenenbroeck (2012) points out that the most evident way within nanosyntax to deal with 'roots' would be to assume that they have functional projections all the way down (as opposed to considering roots as 'special'). However, that position involves obliterating the distinction between lexical and functional categories. This distinction seems useful and based on the generalisation that lexical material is clearly more coercible and more malleable than functional material. I will not take a stand on this point here.

[10] Starke (2001) argues against the traditional notion of specifiers and the distinction between heads and specifiers. Specifiers are heads for him. Given that specifiers agree with the features on heads, they have the same feature as the head and are hence as capable to project as heads are. For the sake of convenience I stick to the traditional way of representing heads and specifiers.

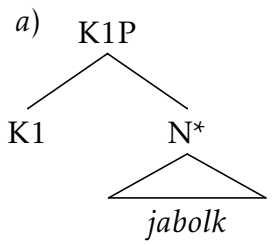
cretisms. It is due to the observed syncretism between NOM and ACC in Slovene that the LI for NOM in Slovene is bigger in size than its syntactic structure: the lexical tree namely also consists of K2 (ACC).

However, the Superset Principle alone is not restrictive enough. If this were the only relevant principle for matching then the LIs in (11c) and (11d) are also good candidates for insertion in K1P, because the lexically stored tree of these items also contain the syntactic node K1 (for this specific example). Another principle is needed to restrict the matching principle. This is achieved by the Elsewhere Condition (Kiparsky 1973), as in (13). The Elsewhere condition ensures that at each cyclic node 'the most specific [LI, kdc] wins' (Starke 2009:4). This principle is informally called *Minimize Junk* (Starke 2009).

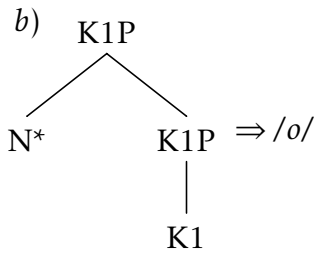
(13) *Elsewhere Condition* or *Minimize Junk*
In case two rules, R1 and R2, can apply in an environment E, R1 takes precedence over R2 if it applies in a proper subset of environments compared to R2 (Caha 2009:18).

Having the Superset Principle and the Elsewhere condition in place, LI (11b) is the winning competitor. Consequently, the case ending /o/ is inserted in the lower K1P, yielding the nominative *jabolko* .

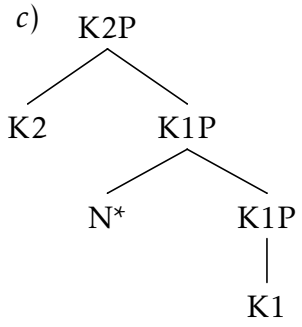
(14)



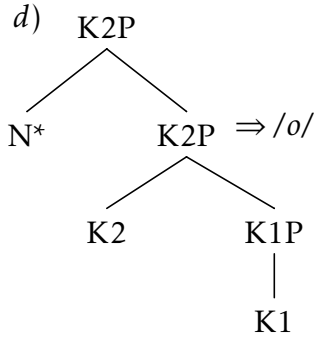
no spell out



spell out of lower K1P



no spell out



spell out of lower K2P
spell out of K1P is overridden

When K2 is merged, the resulting syntactic tree cannot be spelled out: there is no LI which matches the syntactic structure. In order to spell out, N* is cyclically moved to the specifier of the newly merged head. The lexicon is again consulted. The lexical tree in (11b) now matches the syntactic tree in (14)d. /o/ can be inserted. However, we need a principle here which prevents the spellout of NOM from also being preserved. There is namely no form *jabolk-o-o* in Slovene. This principle is *Cyclic Override*. Cyclic Override follows from the theory itself. Starke (2009:4) puts it like this:

> Spellout is taken to be cyclic, with a spellout attempt after each merger operation. Each successful spellout overrides previous successful spell-outs. Since merger is bottom-up, the biggest match will always override the smaller matches.

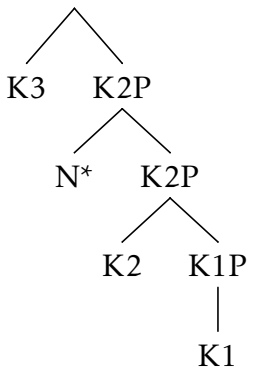
Consequently, when /o/ is inserted at the phrasal node K2P, the previous spell out is overridden. This yields the accusative form *jabolko*.

When K3 is merged, (15)a, the structure is again checked against the lexicon. However, phrasal spell out is not possible due to the presence of N*. Therefore, N* again undergoes cyclic phrasal movement to the specifier of the newly merged head resulting in (15)b. The lexicon is consulted and K3P can be spelled out. The new spell

out /a/ can be inserted and overrides the previous spellout, resulting in the GEN form *jabolka*.

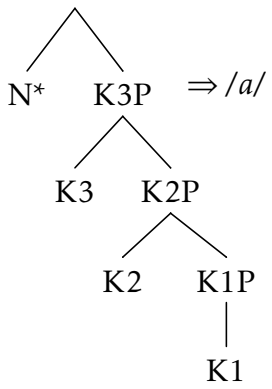
(15)

a)



no spell out possible

b)

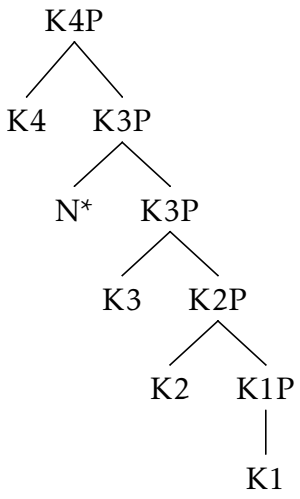


spell out of lower K3P
spell out of K2P overridden

Finally, when K4 is merged, (16)a, the syntactic tree is checked against the lexicon. No LI is found that matches the structure. N* would intervene in the spellout of the case layer K4P. N* moves to the specifier of the newly merged head, (15)b, upon which the lexicon is checked again. Now K4 can be spelled out and /u/ can be inserted. The previous spellout is overridden, yielding the dative form *jabolku*.

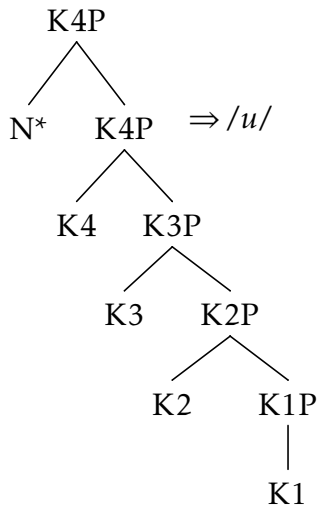
(16)

a)



no spell out possible

b)

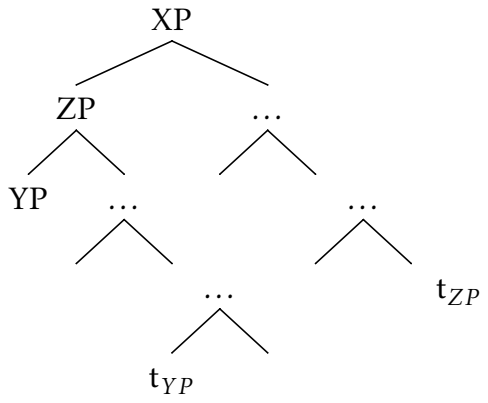


spell out of lower K4P
spell out of K3P is overridden

In all the trees above, when movement applied in order to be able to spell out it was cyclic phrasal movement: N* moves cyclically up the tree. However, another kind of phrasal movement, namely snowball movement or roll-up movement (Collins 2002,

Aboh 2004), is allowed if Merge or cyclic phrasal movement does not lead to spell out. Snowball movement is the kind of movement in which a phrase moves cyclically up the tree and pied pipes the projection containing its previous landing site, as in (17).

(17)



Since cyclic phrasal movement moves less material than snowball movement, it is more economical and thus to be preferred. Similarly, no movement at all is less costly, and thus again preferred. Thus we end up with the following hierarchy for movement, (18):

(18) do not move – cyclic phrasal movement – snowball movement

A typical situation in which snowball or roll-up movement would be necessary is when there is case-compounding, i.e. when two case-endings co-occur on one N*, spelling out only one case dependency. I illustrate this for the West-Tocharian GEN. The West-Tocharian case paradigm, from (Caha 2009:69), in table 2.2 is repeated here as 2.4.

	horse.pl	**man.pl**
NOM	yakw-i	enkw-i
ACC	yakw-em	enkw-em
GEN	yakw-em-ts	enkw-em-ts

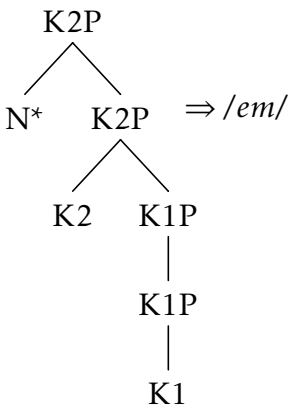
Table 2.4: West-Tocharian case compounding

I assume the lexicon of West-Tocharian contains at least the LIs in (19).

(19) a. </-em/, [K2 [K1]]>
b. </-ts/, [K3] >

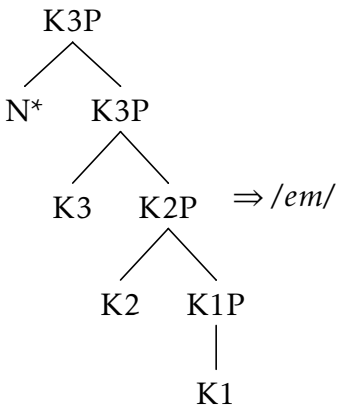
In order to spell out the West-Tocharian genitive of *horse*, K1 and K2 are first merged and spelled out according to the rules of phrasal spell out discussed above, (20). There is an LI (19a) in the lexicon of West-Tocharian which allows for insertion of the case-ending *em* in K2P.

(20)



Once ACC is created as in (20), K3 is merged. The lexicon will be checked, but there is no LI to spell out this syntactic structure. Consequently, cyclic phrasal spell out applies and the derived structure is as in (21).

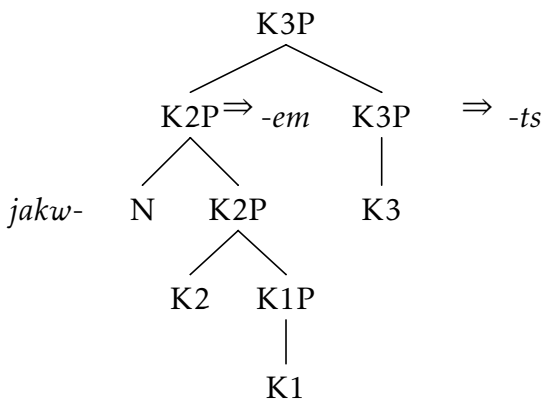
(21)



However, upon checking the lexicon, this structure cannot be spelled out either, since there is no lexical tree which contains this syntactic tree.

This would lead to a crash, if there were no other option. But as we saw, there is one more movement in the hierarchy of displacements that can lead to successful spell out, viz. snowball movement. However, snowball movement cannot start from the point where the derivation has stopped in (21). Starke (2011a) proposes that at this point the derivation backtracks one step, so that cyclic phrasal movement is undone. As a next step, N* moves again to K3P but this time it pied-pipes along its complement, as in (22). Now there is a lexical item in the lexicon corresponding to the lower K3P in (22), namely (19b). This LI can be inserted. As a result of the snowball movement the previous spellout cannot be overridden and hence there is case compounding. In chapter 4 and 9 I discuss an instance of negation compounding.

(22)



Finally, the system of phrasal spell out complemented with the Superset Principle, the Elsewhere Principle and Cyclic Override is well-equipped to capture the absence of ABA-patterns in the domain of syncretisms. More radically, they are ruled out by the system itself.

2.4 Peeling

Apart from being able to capture the absence of ABA-patterns for syncretisms, a nanosyntactic approach also accounts for well-known syntactic phenomena like case alternations, as found, for instance, in the active-passive transformation. In this section I briefly sketch one of the ways in which nanosyntax can play a role in clausal syntax.

In many languages the object of an active verb is ACC, whereas its counterpart in the passive is realized as NOM. (23) illustrates the relevant pattern in Czech: in the active sentence, (23a), *tráv-u* is in the ACC and it is the object of that sentence. In the passive in (23b) *tráv-a* is the subject of that sentence and is in the nominative. However, it still has the same theta-role as in (23a): 'the grass' undergoes the action performed by Karel in (23a) or someone unspecified in the passive sentence (23b) and is hence the Patient.

(23) a. Karel nalož'il tráv-u na vůz
Karel loaded grass-acc on truck
'Karel has loaded the grass on the truck.'

b. Tráv-a byla naložena na vůz.
Grass-nom was loaded on truck
'The grass has been loaded on the truck.' (Caha 2009:143)

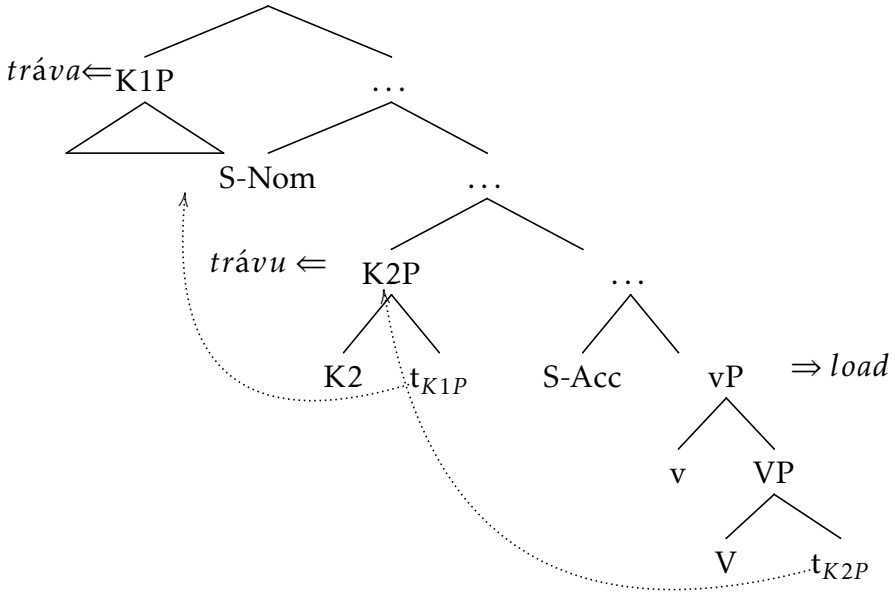
To account for this and similar instances of case alternations, Caha (2009) develops a Peeling Theory of Case.[11] Peeling theory in fact shows the impact of clausal syntax on spell out. NP*s are base generated in a theta-position with a number of case layers on top of them. Each NP* is base-generated with the number of case layers that

[11] Caha develops this theory partly based on lectures by Michal Starke at Tromsø university in 2005. For a peeling theory of agreement, see Rocquet (2013).

are necessary for the expression of a given theta-role, i.e. recipients in the dative, instruments in the instrumental, accompaniments in the comitative and so on. In each syntactic movement step, i.e. non-spell out driven movement, (at least) one of the case shells gets stranded. A base-generated KP*[12] gets peeled because one of its layers is attracted by a case selector (k-selector).

Let us see how case peeling can be applied to the Czech examples in (23). In an active sentence the ACC argument *tráv-u* is base-generated with two layers for the accusative and the entire KP* moves to the Accusative selector (S-Acc) to check case against the appropriate assigner. However, to get the passive sentence in (23b) that same accusative argument gets peeled and the NOM-layer, K1P, gets attracted by a NOM-selector (S-Nom) in the TP-domain, realizing *tráva* 'grass' in subject position.

(24)



It is not my aim to go into the details of the spellout of peels and remnants. I mainly want to show that submorphemic features and the case spine also play a role in clausal syntax. Due to the structure of the case spine case-alternations get a natural explanation without losing the intuition that both the NOM subject and the ACC object have the same theta-role and thus probably a common source. The structure of the case spine, (25), also provides for a better understanding of the available case alternations: any case on the right of the sequence in (25) can become any case on its left.

[12] KP* stands for the NP* with the necessary number of case layers on top of it.

(25) The Case sequence:
nominative – accusative – genitive – dative – instrumental – comitative (Caha 2009:10)

The relevance of peeling for this study becomes clear in chapter 4 and 9 in the discussion of negative markers and the derivation of negative polarity in French. I refer the reader to Caha (2009), Medovà (2008), Medovà and Taraldsen (2007) for more details on Peeling.

2.5 Conclusion

In this chapter I explained how the core principles of nanosyntax, namely phrasal spell out, the Superset Principle, the Elsewhere Principle and Cyclic Override together provide a theory which can capture attested syncretism patterns and excludes unattested ABA-patterns. The approach allows one to look inside a morpheme to lay bare the distinctive features a morpheme consists of.

These submorphemic features and thus the internal structure of a morpheme also shed light on clausal syntax. With respect to this I explained how Peeling Theory provides a novel approach to case alternations, like the active-passive alternation. The structure of the case spine is indicative of which case alternations are allowed and which are not allowed.

In Part I I look at negative markers from the perspective of nanosyntax. In order to detect the submorphemic features inside a negative morpheme I investigate syncretism patterns within the domain of negative markers. This leads to the postulation of a negative spine, a Split NegP. In Part II I show how this negative spine interacts with the clause.

Part II

Internal Syntax of Negation

3

The data: the morphosyntax of negative markers

3.1 Introduction

In the introductory chapter on nanosyntax we discussed how syncretisms between different case markers can be used to diagnose underlying and hidden structure. More concretely, it is proposed that one case morpheme consists of submorphemic features with cases being contained within each other.

In this chapter I argue that a similar approach can be taken to negative markers. For instance, what looks like one negative morpheme - English *not* - can actually be subdivided into submorphemic units.

In order to be able to decompose the negative morpheme, we need to look at syncretism patterns between negative markers. This raises another issue: with respect to the classification of case-features the literature, both traditionally descriptive and formal, provides us with a reasonably good insight into what the different classes or kinds of case markers are. For negation the different kinds or classes of negation are not so clearly delineated, though distinctions have been made with respect to the scope of negation: propositional negation, predicate negation and predicate term negation are well-known concepts from traditional logic (Horn 1989:140-141).[1]

[1] Horn's (1989) entire book is dedicated to a careful discussion of these concepts within the history of logic. I refer the reader to his book for a thorough discussion. The pages (Horn 1989:140-141) mentioned here provide a neat summary of the different concepts used by some of the key philosophers

The aim of Part I is to develop a nanosyntactic approach to negation. In order to achieve this goal I first propose a classification of negative markers into four types in section 3.2. In section 3.3 I then examine the encoding of these four types of negative markers and the syncretism patterns that arise between them in relation to nine different languages. In the next chapter I account for these syncretisms as a consequence of structure within the negative morpheme itself.

For expository purposes, I limit my discussion to negative markers that combine with adjectival predicates in predicative position and with the copular verb (if present) that combines with these adjectives. Consequently, I look at negative markers which express both standard and non-standard negation in combination with adjectival predicates and copular verbs.

I will not consider negative morphemes like *-less*, since this negative suffix selects nouns and turns them into adjectives, nor will I consider negative markers on verbal predicates, as in *disagree*, or on nouns, as in *non-event*. I am at this point not taking other negative strategies into account than pure negation: I do not consider negative indefinites like *no*, *nothing*, *nobody* in argument position nor do I consider negative adverbs like *nowhere* or *never*.

3.2 Classification of negative markers

3.2.1 Introduction

I classify negative markers according to four properties: 1) their scope position, 2) their ability to be stacked, 3) their semantic label (contradictory or contrary negation) and 4) their function(s).

Based on this classification I subdivide negative markers into four different types, whose label is based on the syntactic position in which they take scope: 1) negative polarity markers (Pol^{Neg}-markers), 2) negative focus markers (Foc^{Neg}-marker), 3) negative degree markers (Deg^{Neg}-markers) and 4) negative quantifier markers (Q^{Neg}-markers).

Before I apply the classification to the negative markers of nine different languages in 3.3, I first discuss the four properties which lie at the origin of the classification.

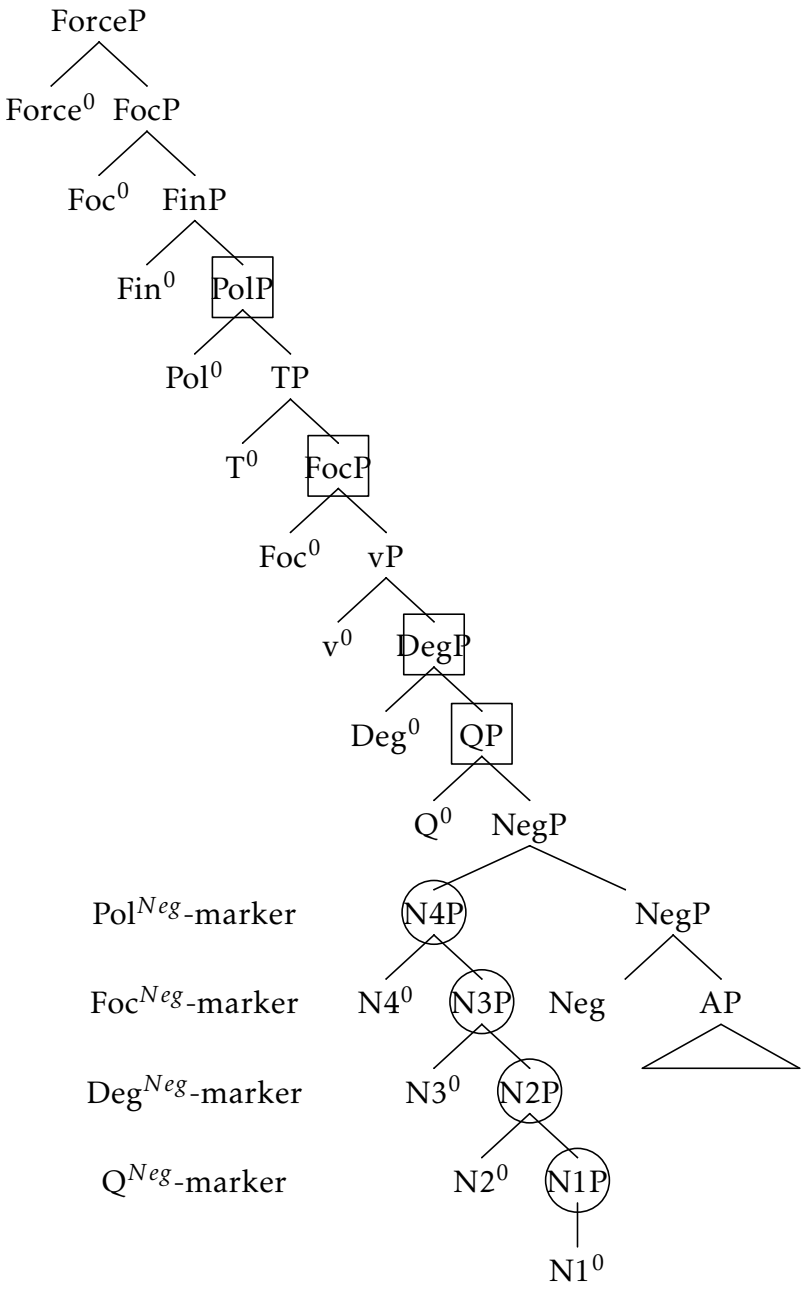
3.2.2 Property 1: Scope position

The most important classification criterion both for the label and the classification is the scope a negative marker has. Scope does not necessarily coincide with the surface position of a negative marker.

and logicians in the history of negation.

The structure in (1) shows the negative markers in their base-position (the circled projections) with their respective scope positions (the squared boxes). I provide arguments for the base-position in chapter 5. The scope positions I briefly discuss here, though I reserve full discussion of these functional projections for chapter 6.

(1)



3.2.2.1 Pol^{Neg}-markers

Pol^{Neg}-markers take scope in a Polarity Phrase (PolP), a functional projection at the clausal level (Laka 1990, 1994, Cormack and Smith 2002, Poletto and Zanuttini 2013) located higher than Tense Phrase (TP), (1). They thus take scope over tensed predicates.

Pol^{Neg}-markers either overtly precede the finite copular verb or they take scope

over the finite copular verb, as is the case for English *not* and French *pas*.[2] Mostly, scope taking can be tested. A good way of testing whether a negative marker is a Pol^{Neg}-marker is the question tag-test in English (Klima 1964) (see chapters 1 and 8). For French for instance *pas* expresses sentential negation when the optional preverbal clitic *ne* can be added without any change in meaning.

Within Aristotelian term logic (Horn 1989:chapter 1) negative markers taking wide scope over the predicate are said to give rise to *predicate denial* (Horn 1989:31). In the case of predicate denial the predicate is denied of the subject. For a sentence like (2) this is indeed the case: the predicate *happy* is denied of the subject *John* by the clitic negative marker *n't*.

(2) John isn't happy.

Aristotle's notion of predicate denial is comparable to what is known as *propositional negation* in Fregean propositional logic (Horn 1989:138). A Pol^{Neg}-marker in a sentence like (2) thus takes scope over the entire proposition, including the subject and can thus be paraphrased as 'It is not the case that John is happy'.[3]

Another way to refer to Pol^{Neg}-markers is as markers which give rise to sentence negation (Klima 1964) or nexal negation (Jespersen 1917).

3.2.2.2 Foc^{Neg}-marker

Foc^{Neg}-marker take scope in a low Focus Phrase (FocP), a projection dominating vP (Belletti 2004, Jayaseelan 2001, Butler 2003, Jayaseelan 2008, Kandybowicz 2013), cf. (1). Consequently, they do not take scope over the tensed predicate and their scope is restricted to the untensed predicate.

For a sentence like (3) *not* can either scope over the tensed predicate and take widest scope and hence behave like a Pol^{Neg}-marker, but it can also scope over the untensed predicate and express *predicate term negation* in Aristotle's terminology (Horn 1989). The two scope options are visible in the grammaticality of both question tags.

[2] I focus on Pol^{Neg}-markers that combine with the present indicative tense. However, there are languages that develop different negative markers depending on Tense or Mood (Haspelmath 2011, Dryer 2011). For instance Greek has a special negative marker for the subjunctive, namely *min* (Willmott 2008). If a language has different markers within the finite domain, these markers tend to be in complementary distribution with the present tense, indicative marker. I assume for now that most tense or mood-related markers belong to the Pol^{Neg}-marker group. I leave tense and mood-alternations for future research and focus on the present indicative markers, which I consider the core markers of this group.

[3] Quantificational subjects can outscope the scope of a Pol^{Neg}-marker, as for instance in (i):

(i) Somebody didn't come.

The negative marker does not have scope over the subject, because (i) doesn't mean that 'nobody came'. As a PPI *somebody* cannot scope under negation.

(3) Kim is not happy, is she/ isn't she? (Horn 1989:517)

When negation scopes only over the predicate the negative predicate is affirmed of the subject, resulting in an emphatic construction with emphasis on *not*, (4a), and/or on any intervening modifier between the negative marker and the adjectival predicate, as in (4b):

(4) a. Kim is NOT happy, isn't she?
b. Kim is NOT VERY happy (, isn't she?)

I refer to Foc^{Neg}-markers as expressing *predicate negation* rather than *predicate term negation*, due to the fact that they can scope over the entire untensed predicate and not only over a predicate term.

Foc^{Neg}-marker are typically used as adverbial modifiers, as in (5).

(5) not long ago, not everybody, not very often

In many languages — though not in English — the same morpheme as the Foc^{Neg}-marker is used to say *No!*, again referring to the emphatic and focal character of these negative markers.

3.2.2.3 Deg^{Neg}-markers

Deg^{Neg}-markers take scope in a Degree Phrase (DegP), which Corver (1997b) proposes is one of the two functional projections in the extended projection of gradable APs, see (1). The other functional projection is QP.

According to Corver DegP hosts degree items like *so*, *that* and *how*, as in(6), which are deictic and have determiner-like properties and therefore point to a specific degree on the scale of tallness.

(6) That boy is so tall!

In the same vein Deg^{Neg}-markers scope over the predicate term and not over the entire untensed predicate (as Foc^{Neg}-marker can do), as illustrated by the example in (7): *non-* does not take scope over *very*, only over *professional*. They thus express predicate term negation in Aristotelian terms.

(7) a. She is very nonprofessional.
b. = She is [very [¬ professional]].
c. ≠ She is [¬ [very professional]].

Deg^{Neg}-markers are determiner-like degree-elements (Bresnan 1973) which point to the immediate opposite of the non-negated predicate. They point to the fact that a

certain property is absent. Consequently, the degree to which the property is present is 'zero'.

(8) 1 professional — 2 semi-professional — (3) non-professional

Deg^{Neg}-markers give rise to *special negation* according to Jespersen (1917) and to *constituent negation* according to Klima (1964). Scope-wise, Deg^{Neg}-markers have a lot in common with Q^{Neg}-markers, which I discuss in the next section.

3.2.2.4 Q^{Neg}-markers

Q^{Neg}-markers take scope in a Quantifier Phrase (QP) which is another of the functional projections which Corver (1997b) proposes dominate AP, (1).

According to Corver QPs hosts quantifiers like *more*, *less*, *enough*, (9). As I argue in chapter 6 quantifiers restrict the denotation of the adjective by picking a set of degrees on the scale of 'intelligence'.

(9) John will never be more$_i$ intelligent than his sister.(Corver 1997b:132)

In the same vein Q^{Neg}-markers select a set of degrees at the outer end of the scale of for instance *happiness*, illustrated in (10).

(10) 1 2 3 4 5 6 7 (8) 9 (10)
happy — unhappy

Like Deg^{Neg}-markers also Q^{Neg}-markers scope over the predicate term and not over the entire untensed predicate, as illustrated in (11). They thus express predicate term negation in Aristotelian terms.

(11) a. She is very unhappy.

b. = She is [very [¬ happy]].
c. ≠ She is [¬ [very happy]].

However, their scope position is even closer to the adjectival stem than the scope position of Deg^{Neg}-markers. This is not only based on the two projections by Corver (1997b), but it also follows from the morphophonological behavior of some Q^{Neg}-markers. Some Q^{Neg}-markers in English, like the Q^{Neg}-marker *iN-*, have allomorphs, i.e. they undergo morphophonolgical change due to the adjectival stem to which they attach, as illustrated in (12).

(12) inhuman, ir-relevant, im-mature, im-portant, il-logical, … (based on Zimmer

1964:28-29)

This is a typical property of Level I-morphemes (Siegel 1979, Allen 1978, Williams 1981, Lieber 1981, Selkirk 1982, Kiparsky 1982, 1983, Pesetsky 1985 and Horn 1989), a morpheme that is structurally very close to the root. Level II-morphemes, like for instance the Deg^{Neg}-marker *non-* (Horn 1989:273-286), never show this morphophonological change. Not surprisingly, it is Q^{Neg}-markers, which have lowest scope and which give rise to lexicalized and/or contrary readings (cf. section 3.2.4 and Horn (1989:282)). Deg^{Neg}-markers, Foc^{Neg}-marker and Pol^{Neg}-markers give rise to contradictory negation and never yield lexicalized readings.

Q^{Neg}-markers thus also give rise to *special negation* according to Jespersen (1917) and to *constituent negation* according to Klima (1964).

Summarizing, the scope of Deg- and Q^{Neg}-markers seems the same at first sight. However, as I will discuss in 3.2.3, Deg^{Neg}-markers can take scope over Q^{Neg}-markers and not the other way around. Moreover, there is an important semantic distinction between both predicate term negators.

3.2.3 Property 2: Stacking

The scope position of the different types of negative markers also predicts which negative markers can co-occur or stack. A Pol^{Neg}-marker can in principle co-occur with a Foc^{Neg}-marker, a Deg^{Neg}-marker and a Q^{Neg}-marker at the same time, though this combination hardly ever occurs.[4]

A sentence in which the Pol^{Neg}-marker *n't* stacks on the Foc^{Neg}-marker *not* and the Q^{Neg}-marker *un* is in (13).

(13) She isn't NOT unhappy.

Consequently, due to the fact that *n't* can stack on *not* and *not* on *un*, but not the other way around, stacking can be used as a test to see what the scope property of a negative marker is. The rule is that the negative marker which can stack on most items takes widest scope.

Sometimes a language has several markers which seem to belong to the same group. Stacking is a good test to know whether two markers which seem to share the same properties belong to the same group: if stacking is possible they do not belong to the same group, if it not possible they probably belong to the same group. The English negative markers *un-* and *dis-* for instance cannot be stacked, (14). As I discuss in detail in 3.3.2.1, I interpret this as that both negative markers are Q^{Neg}-markers.

[4]Poletto (2008) argues that in negative doubling languages, like certain Italian dialects, co-occurrence of four negative markers is possible. I refer the reader to chapters 4 and 10 for discussion of Poletto (2008).

(14) *undisloyal, *disunhappy, ...

Summarizing, the more negative markers a certain marker can stack on, the wider its scope. When a negative marker cannot stack on any other negative marker, it is necessarily a Q^{Neg}-marker. The stacking properties of negative markers are thus a probe into their scope properties.

3.2.4 Property 3: Contradiction and contrariety

An important semantic difference between negative markers is whether they express contradictory negation or contrary negation. In this section I first explain the difference between both concepts and frame them briefly within logic. Subsequently, I argue — in line with Horn (1989:ch5) — that Pol-, Foc- and Deg^{Neg}-markers, as in (15), are contradictory negative markers, and that Q^{Neg}-markers, as in (16), are contrary negative markers.[5]

(15) a. He is not happy.
b. He is nonhappy.
c. He is NOT happy.

(16) a. He is disloyal.
b. He is unhappy.

Two sentences are each other's contradictories when the Law of Contradiction (LC) and the Law of the Excluded Middle (LEM) apply. The LC states that a proposition (p) cannot be true and false in the same circumstances.

(17) Law of Contradiction (LC)
$\sim(p \,\&\, \sim p)$ (Russell 1940:259)

The Law of the Excluded Middle says that any proposition is either true or false.

(18) Law of the Excluded Middle (LEM)
$p \vee \sim p$ (Russell 1940:259)

Sentence (19a) and (19b) cannot be true or false at the same time. They respect the LEM and the LC.

(19) a. Leila is not married.
b. Leila is married.

For a pair like (20a) and (20b) the LC applies but the LEM does not hold: both (20a) and (20b) can be false at the same time, as illustrated by (20c). When two propositions

[5]The discussion in this section is based on Horn (1989:ch1, ch5, ch6).

can be false together, they are each others contraries.

(20) a. She is happy.
b. She is unhappy.
c. She is neither happy, nor unhappy.

Following Horn (1989), I assume that the contrariness of (20a) and (20b) is invoked by the low scope predicate term negator *un-*. *un-* invokes a middle ground between two predicates, which is not done in the same way by a negative marker which expresses predicate denial, like *not* or *n't* .

Based on the importance of predicate terms for the expression of contrary negation, Horn advocates a revival of Aristotle's term logic and for the application of the notions contradiction and contrariety to predicate term negators.[6] Horn (1989) argues that the English negative markers *not* and *non-* give rise to immediate contraries in Aristotle's system of opposition. An example of immediate contraries is in (21).

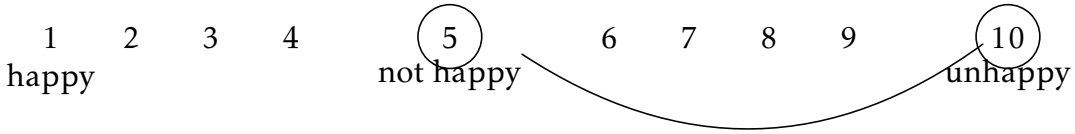
(21) a. happy $\longleftrightarrow$ not happy
b. bald $\longleftrightarrow$ nonbald

However, when used in sentences like (22), they are clearly contradictory statements: if John is a person in this world either (22a) or (22b) will be true and the other false.

(22) a. John is bald.
b. John is nonbald.

Contradictory markers with gradable predicates normally denote the entire negative part of the scale of *happiness*, also called the complement of *happy*, as illustrated in (23). For *not happy* for instance the values in between 5 and 10 on the scale can be denoted.

(23)



A contrary negative marker like *un-* on the other hand denotes only the outer negative end of the scale of not-happiness, as in (24), thus creating a middle ground between 'not happy and unhappy' where one can be 'neither happy nor unhappy'.[7] Con-

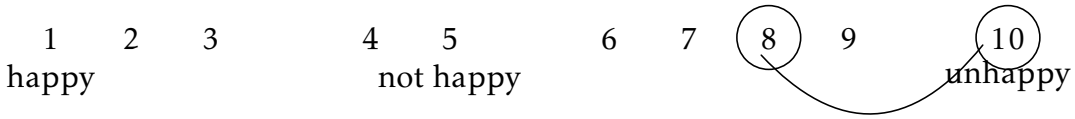
[6] A formulation of LC and LEM that is compatible with term logic is (ia) - (ib), based on Rescher (1969:149) and Geach ([1972] 1980:74-75).

(i) a. $\sim\exists x(Px \,\&\, \sim Px)$
b. $\forall x\,(Px \vee \sim Px)$

[7] See chapter 5 for more discussion.

trary negative markers thus select a subset of the meanings expressed by contradictory markers.

(24)



Q^{Neg}-markers sometimes get a lexicalized interpretation, as for instance in (25). The availability of lexicalized readings has been considered a consequence of the fact that Q^{Neg}-markers are Level I-prefixes (cf. section 3.2.2). The meaning of the Q^{Neg}-marker and the adjective together can strengthen to the meaning of a non-negative polar opposite. For instance on the scale of *humanness*, there is *human*, *inhuman*, but also the non-negative polar *cruel* which denotes the absolute end of the scale. Q^{Neg}-markers can typically strengthen to a lexicalized non-negative polar opposite with respect to the meaning it triggers. In (27) I have put *inhuman* on a scale in order to compare it to the meaning of *unhappy* in (26). Even though *unhappy* can be interpreted as 'sad' in certain contexts, it does not necessarily do so. For *inhuman* on the other hand the negated adjective almost always coincides with the non-negative polar opposite 'cruel'. That is why it is warranted to say that the meaning of the Q^{Neg}-marker has become lexicalized.

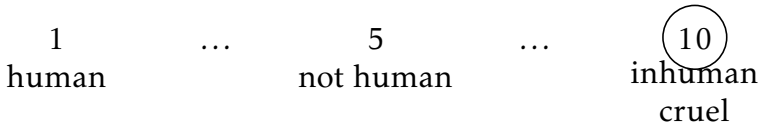
(25) He is inhuman.

a. ='He is cruel'

b. ≠'*He is not human'

(26)

(27)



Summarizing, based on Horn's classification of English negative markers in terms of contradiction and contrariety I argue that Pol, Foc and Deg^{Neg}-markers express contradictory negation and Q^{Neg}-markers express contrary negation.

3.2.5 Property 4: Function

The fourth criterion to distinguish negative markers from each other is their function. Pol^{Neg}-markers deny, Foc^{Neg}-markers contrast or modify, Deg^{Neg}-markers classify and Q^{Neg}-markers characterize.

Negative markers that scope over tensed predicates, our so-called Pol^{Neg}-markers, predominantly have the function of denying a previous utterance. Horn (1989:203) states that: 'the prototypic use (…) of negation is indeed as a denial of a proposition previously asserted, or subscribed to, or held as plausible by, or at least mentioned by, someone relevant in the discourse context.'[8]

The function of Foc^{Neg}-marker like English *not* is ambiguous. They either have a modifying function, as in (28a), or they function as contrastive negative markers, (28b), introducing new or correct information which can be added as in (28b). In the latter case the negative marker is usually stressed.

(28) a. a not very happy man, not long ago,
b. John was not happy, but sad.

The function of Deg^{Neg}-markers like English *non-* is classifying (Warren 1984:101, Kjellmer 2005), whereas the function of Q^{Neg}-marker like English*un-*, *iN-*, *dis-* is characterizing (Funk 1971, Kjellmer 2005). The function of these negative markers is directly related to their semantics: contradictory negative markers, like Deg^{Neg}-markers, can be classifying because they create binary opposites, whereas contrary negative markers, like Q^{Neg}-markers, can be characterizing because they invoke a scale between two opposed predicates. Kjellmer's (2005) corpus-based study of English makes this distinction explicit. He shows that the English Deg^{Neg}-marker *non-* is usually used as a classifying negative marker, as in (29) and the English Q^{Neg}-markers *un-*, *dis-*, *iN-* are usually characterizing, (30).

(29) a. Nicola believes herself to be a non-angry person and, indeed, she never loses her temper. (Corpus:ukbooks/08.)
b. Use non-fat milk instead of whole milk. (Corpus npr/07.)
c. I am an oddity in my family, having artfully asserted the dominance of my non-red gene. (Corpus:oznews/01.) (Kjellmer 2005:162)

[8]Horn (1989) distinguishes another function of sentential (and contrastive) negators (my Pol- and Foc^{Neg}-marker), namely the expression of metalinguistic negation. Examples of metalinguistic negation are in(ia)–(ib):

(i) a. Chris didn't m̆anage to solve the problem-it was quite easy for him. (Horn 1989:368)
b. He didn't call the [pólis] , he called the [polís]. (courtesy of Andy Rogers) (Horn 1989:371).

In (ia) the speaker is not disputing the fact that Chris solved the problem. The speaker refers to how this happened. In (ib) the speaker is correcting the pronunciation of the word police of an interlocutor. Metalinguistic negation is thus not concerned with the facts that are expressed by the words in the discourse, but with the interpretation of a particular word or phrase in the discourse, as in (ia) - or even with the pronunciation of a particular word, as in (ib). The properties of metalinguistic negation are clearly discourse related. I shall not attempt to investigate and analyze them in this work. I refer the reader to Horn (1989:chapter 6) for discussion and references.

(30) a. ... President Clinton, a man whose liberalism and personal lapses arouse distinctly unchristian hatred at First Federated. (Corpus: times/10.)
b. Lainey had a terrible voice, unmusical and sharp, and she usually pitched herself an octave below the sopranos to submerge it. (Corpus: usbooks/09.)
c. Germans are great if you're a little vague, indecisive and like to be told what to do in short, clear sentences. (Corpus: times/10.)
d. Some parents say children in Sarajevo have become increasingly disobedient and difficult to control during this wartime. (Corpus: npr/07.) (Kjellmer 2005:162-163)

Sometimes, Q^{Neg}-markers, like *un-*, have a classifying function. This is mostly the case when they combine with adjectives ending in *-able* (Kjellmer 2005, Horn 1989, Zimmer 1964). I come back to this in 3.3.2.1. Moreover, I account for the lack of a contrary interpretation or the absence of a characterizing function for Q^{Neg}-markers in 7 in terms of the absence of a QP projection in the clausal spine.

Summarizing, Pol^{Neg}-markers deny, Foc^{Neg}-marker contrast, Deg^{Neg}-markers classify and Q^{Neg}-markers characterize.

3.2.6 Conclusion

The criteria on which the classification of negative markers is based are 1) scope properties and related to this 2) stacking properties, 3) semantic properties (contradictory or contrary) and finally, 4) functional properties.

In the table in 3.1 I provide an overview of the different types of negative markers with their distinctive properties.

	Pol^{Neg}-markers	**Foc^{Neg}-marker**	**Deg^{Neg}-markers**	**Q^{Neg}-markers**
	Predicate denial	*Predicate negation*	*Predicate term negation*	
scope over	tensed predicate	untensed predicate	predicate term	predicate term
stack	on Foc, Deg, Q	on Deg, Q	on Q	-
semantic	contradiction	contradiction	contradiction	contrariety
function	denying	contrasting/modifying	classifying	characterizing

Table 3.1: Classification of negative markers

In the next section I apply this classification to nine different languages.

3.3 Detecting syncretism patterns

In this section I discuss the results of an examination of negative markers in nine different languages in terms of the classification discussed above. The examples used in the discussion were constructed with the help of an informant or are taken from the

literature. The examples which contain several negative markers are in many cases pragmatically odd. Also many instances of low scope negation are in spoken language mostly expressed by a wide scope sentential negation.[9] However, for the purposes of this study I was interested in all negative markers a language has at its disposal and not only in the most standard or most commonly used option.[10]

For each language I looked at the four different types of negative markers distinguished in 3.2. I present the results in terms of all the syncretism patterns I detected. The negative sequence that arises on the basis of the syncretism patterns also reflects the scope and stacking properties of the negative markers: the types of negative markers are thus ordered from those which take widest scope to those which take narrowest scope (or from narrow to wide). I detected six different syncretism patterns for the sample of nine languages. The detected patterns are visualized in table 3.2. I come back to how the syncretisms determine the negative sequence in chapter 4.

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 1				
Pattern 2				
Pattern 3				
Pattern 4				
Pattern 5				
Pattern 6				

Table 3.2: Syncretism patterns

The order of the discussion in the next section is based on the different syncretism patterns I found. I discuss Greek with respect to Pattern 1, English and French for Pattern 2, Persian, Chinese and Modern Standard Arabic (MSA) with respect to Pattern 3, Moroccan Arabic for Pattern 4, Hungarian with respect to Pattern 5 and Czech for Pattern 6.

[9]Most of the data presented in this chapter are constructed with help of one or more informants. This chapter would have been impossible to write without the help and patience of my informants. I mention their names at the beginning of every section. It goes without saying that all errors are mine.

[10]I do not consider in the discussions that follow affixes that are derived from the word 'bad'. I call them the 'badness' strategy. Examples are for instance French *mal-heureux* and Greek *dhis-tixis*, both meaning 'unhappy'. Moreover, some languages do not have a *-less* strategy and always need to use the preposition 'without + noun' to express the same meaning, as for instance Moroccan Arabic, (i).

(i) Elafʕaal djalu bla akhlaaq. (MA)
behavior of-him without moral
His behavior is immoral.

I am not considering these, because they involve nouns, not adjectives.

3.3.1 Pattern 1: Greek

Modern Greek has four different negative markers for the four different types of negative markers we distinguished in 3.2.[11]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 1	dhen	oxi	mi(-)	a-

Table 3.3: Greek negative markers

The Q^{Neg}-marker is *a-*.[12] *A-* gives rise to contrariety and has a characterizing function, as illustrated by the examples in (31).[13]

(31) a. Ine an- endimi.
be.pres.3sg neg- honest.nom.fem.
'She is dishonest.

b. Ine an– ithikos
be.pres.3sg neg- moral.nom.masc.
'He is amoral.'

c. Ine a- pistos
be.pres.3sg neg- loyal.nom.masc.
'He is disloyal.'

d. I methodhos tu ine a- katalili
Det method his be.pres.3sg neg- suitable.nom.fem
'His method is un- suitable.'

e. Ine a- thriskos
be.pres.3sg neg- religious.nom.masc.
'He is unreligious/irreligious.'

The scope of *a-* is restricted to the adjective to which it attaches and it cannot stack on other negative markers, (32).

(32) *a-mi-thriskos
neg-neg-religious.nom.acc

The Deg^{Neg}-marker in Modern Greek is *mi(-)*. *Mi(-)* was the marker for standard negation in Old Greek.[14] *Mi(-)* expresses contradiction and has a classifying function,

[11] Many thanks to Metin Bagriacik and Marika Lekakou for help with the data.

[12] *A-* attaches to the adjectival stem without a hyphen. In order to gloss the examples and indicate the negative marker I separate *a-* from the stem. I do this for all languages I discuss in this section. When a hyphen is used in writing I mention it.

[13] The Greek privative marker *a-* influenced the vocabulary of many other Indo-European languages like English, French, Czech, etc. Even Hungarian has words that combine with *a-*. However, I will not discuss *a-* in my overview of these languages, because it is in all these languages a very unproductive negative marker, restricted to words related to medicine or philosophy. Nevertheless, it could be considered part of the unproductive markers within the Q-group.

[14] *Min* is a negative marker that is prototypically related to the subjunctive, (ia), though this is far

as illustrated by the examples in (33).[15] When nothing intervenes between *mi* and the adjectival predicate, it attaches to the adjective.

(33) a. Ine mi- thriskos.
be.pres.3sg neg- religous.nom.masc.
'He is non-religious.'

b. Ta mi- emborika proionda.
the neg- commercial products
'the noncommercial products.'

c. Ine mi- elinas
be.pres.3sg non- Greek.nom.masc
'He is non-Greek.' 'He is a foreigner.'

Although rare in Greek, *mi* can stack on an already negative adjective, i.e. one that already consists of a Q-marker, as in (34). In this case *mi* does not attach to the negated predicate. The fact that *mi* can do this - even though it is often pragmatically rare - whereas *a-* cannot, is support for the present classification of *mi-* as a Deg^{Neg}-marker, which thus takes scope in a position that is higher than the position in which *a-* takes scope.

(34) a. Ine mi a- theos.
be.pres.3sg neg neg- theist.nom.masc.
'He is non-atheist.'

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from the only environment in which it occurs. Holton et al. (2004) and Mackridge (1985) also mention its usage in gerunds, (ib), after verbs of fearing and in (periphrastic) negative imperatives, (ic).

(i) a. Ithela na **min** ime ef-tixismeni.
wanted.1sg subj neg be.1.sg. good-happy.nom.fem.
'I wanted to not be happy'
(ok when continued with *I wanted to be happy!*

b. Min xerontas poios ine, tou milise kapos apotoma
neg knowing who is, him spoke.3s somehow abruptly
'Not knowing who it was, (s)he spoke to him rather abruptly.'

c. mi féris ton Jáni.
neg bring.subj.2sg the John
'Don't bring John.'

Giannakidou (1998) and Chatzopoulou and Giannakidou (2011) call the environments in which *min* occurs non-veridical environments. *Min* has always been the polarity marker for the subjunctive throughout the history of Greek (Chatzopoulou 2013, Chatzopoulou and Giannakidou 2011), whereas *dhen* became the negative marker of the indicative after a process that Chatzopoulou (2013) describes as bleaching of the emphatic predicate negative marker. *Dhen* can only be stacked on *min* if both belong to different clauses, i.e. main clause and subclause. However, they cannot co-occur within the same clause. I consider *min* to be in complementary distribution with *dhen*. I keep the interaction between negative indicative Pol^{Neg}-markers and mood-related Pol^{Neg}-markers for future research.

[15] When I put hypens in between brackets I want to indicate that the hyphen is not always necessary. I do this throughout the presentetation of the syncretism patterns.

b. mi a- theoretiki psychiatriki
neg neg- theoretical psychiatry
'non atheoretical psychiatry'

c. Ine mi a- thriskos.
be.pres.3sg neg neg- religious.nom.masc.
'He is non ir- religious.'

d. Ine mi an- ithikos.
be.pres.3sg neg neg -moral.nom.masc.
He is non immoral.'[16]

The Foc^{Neg}-marker is *oxi*. It expresses contradictory negation and it functions either as an adverbial modifier, as in (35), or as a negative marker in contrastive contexts, like (36a), (36b). In contrastive contexts *oxi* can also give rise to metalinguistic negation, (38a)-(37). The ungrammatical example in (37a), shows that *oxi* cannot be used in a metalinguistic or contrastive context if no correction is added. However, when there is a corrective statement added, the use of *oxi* is grammatical, (37b).[17]

(35) I Roxanni metakomise oxi poli kero prin.
The Roxanne moved.3sg neg much time ago
'Roxanne moved not long ago.' (Giannakidou 1998:50)

(36) a. Podhosferistis ine oxi ithopios
Football.player be.pres.3sg no actor
'He is a football player and not an actor'

b. (Aftos) ine Elinas ke oxi fliaros? adhinato
He be.pres.3sg Greek and no chatty impossible
'He is Greek, and (he is) not chatty? Impossible'

(37) a. *Oxi poli fitites irthan
not many students came.3pl

b. Irthan, oxi poli fitites ala liji.
Came.3pl not many students but few
'Not many students came; only a few did.' (Giannakidou 1998:50)

(38) a. De tha su to doso, **oxi** apo tsigunia, ala apo
neg will you.gen it.acc give.1sg, neg from stinginess but from
endiaferon.
interest
'I won't give it to you, not because I'm stingy, but because I'm concerned.'

Support for the classification of *oxi* as a Foc^{Neg}-marker also comes from stacking: *oxi*

[16] Thanks to George Tsoulas for these judgments.

[17] Unlike in English metalinguistic negation in Greek is only possible with the Foc^{Neg}-marker, not with the Pol^{Neg}-marker. This leads Giannakidou (1998) to claim that Greek has a special negative marker for metalinguistic negation. However, given the other functions of *oxi*, namely as a contrastive negative marker and an adverbial modifier, this claim seems unwarranted.

can be stacked on top of *mi*, as in (39a)-(39b).

(39) a. A: aftos dhen ine katholu kalos stin dhulia tu.
A: He neg be.pres.3sg. neg.at.all good in.the work his
'He is not good at all at his work'

b. B: e, oxi mi -epangelmatikos omos…
B: disc-part., neg neg -professional though
'but not unprofessional though …'

The Pol^{Neg}-marker is *dhen*. *Dhen* gives rise to contradictory negation and is used to express speaker denial. *Dhen* precedes finite verbs and takes overt scope over the tensed predicate. It can be stacked on other negative markers: within a clause with one main lexical predicate it can co-occur with Q-, (40a), Deg-, (40b) and Foc^{Neg}-markers, (41), giving rise to double negation. For the example in (41) focal stress is needed on both *dhen* and *oxi*. I indicate this in capitals.

(40) a. Den ine an- endimi.
neg is neg- honest.nom.fem.
' She is not dishonest'

b. Dhen ine mi- thriskos.
Neg is neg- religous.nom.masc.
'He is not non-religious.'

(41) a. A: Ine OXI eksipnos ala ergatikos.
is neg clever but hardworking
'He is not clever, but hardworking.'

b. B: DHEN ine OXI eksipnos ala ergatikos.
neg is neg clever but hardworking
'It is not the case that he is clever, but hardworking.'

Summarizing, there are no syncretic negative markers in Greek for the four types in 3.2. *A-* is the Q^{Neg}-marker in Greek, *mi-* the Deg^{Neg}-marker, *oxi* the Foc^{Neg}-marker and *dhen* the Pol^{Neg}-marker.

3.3.2 Pattern 2: English and French

3.3.2.1 English

English has three productive negative markers for the four types we distinguished, with *not* a a syncretic marker for Pol- and Foc-negation.

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 2	not	not	non-	un, (iN-, dis-)

Table 3.4: Standard English

English has several Q^{Neg}-markers. However, not all of them are productive markers. I argue that *un-* is a productive Q^{Neg}-marker, whereas *in-* (and its allomorphs *il-/im-/ir-*) and *dis-* are synchronically only marginally productive prefixes (Zimmer 1964).[18]

un-, *iN-*, *dis-* all give rise to contrary negation, i.e. they trigger a scalar interpretation and hence they have a characterizing function, as already illustrated in section3.2.5 and repeated here by the example in (42).

(42) a. His behavior is un-American.
b. =inappropriate for an American.
c. ≠ = not American

Some Q^{Neg}-markers give rise to a more lexicalized reading, as illustrated by the example in (43) and also discussed in section 3.2.5.

(43) She was charged with being drunk and disorderly.
a. ='She was charged with being drunk and showing conduct offensive to public order.'
b. ≠ 'She was charged with being drunk and showing conduct that was not orderly.'

iN- and *dis-* combine with words of foreign origin (Zimmer 1964) and they are less productive than *un-*: *iN-*, is a Latin based prefix and it combines with words from mainly Latin origin: *inhuman*, *impeccable*, *immaculate*, …. *Dis-* usually combines with words from French (and hence mostly Latin origin): *disadventageous*, *discourteous*, *disharmonious*, …. The unproductive prefixes, cf. (44) are in complementary distribution with *un-*, (45), that is rather used for native English words and is - probably because of this- much more productive.

(44) a. He is rational.
b. He is ir-rational
c. He is *un-rational.

(45) a. He is American.
b. His behavior is un-American.
c. His behavior is *in-American.
d. His behavior is *dis-American.

Q^{Neg}-markers take scope in a position close to the adjectival predicate. This is not only

[18] As mentioned before, I do not consider the highly unproductive *a-* (Zimmer 1964, Kjellmer 2005). *a-* is derived from the Greek privative marker *a-* and combines in the first place with words from Greek origin like *agnostic*. However, often the marker is also attached to Latin-based words as for instance in *amoral*, *arational*.

clear from the fact that these negative markers can give rise to lexicalized readings, a property which is said to be related to Level I-morphemes, but also from the fact that they cannot be stacked on any other negative marker, (46).[19]

(46) a. *indishonest, *inunhuman, *disunhappy/ / *disinhuman, *unnothappy, *unnonprofessional, …
b. *undiscourteous, *undishonest, *undisagreeable (Lehrer 2002:504)

I thus treat English *un-*, *iN-* and *dis-* as Q^{Neg}-markers. However, due to the synchronic unproductivity of *iN-* and *dis-* (Zimmer 1964), I consider *un-* the productive Q^{Neg}-marker and *dis-* and *iN-* unproductive Q^{Neg}-markers. I come back to this in 4.2.4.

The Deg^{Neg}-marker in English is *non-*. It gives rise to contradictory negation and it has a classifying function, as already illustrated in 3.2.5. Whereas *un-* triggers a scalar reading resulting in a characterization which often involves some moral judgment, *non-* merely classifies by pointing to the absence of a certain property. For a context like (47), the Q-negated adjective is appropriate, but not the Deg-negated predicate. However, for a context like (48), only the Deg-negated predicate is a politically appropriate remark, whereas the use of the Q-negated predicate would be perceived as politically incorrect.

(47) a. Context: An American boy is spitting on the American flag. A teacher says:
b. His behavior is un-American. (= inappropriate for an American)
c. # His behavior is non-American.

(48) a. Context: Amie is an actress. However, she never obtained a degree for acting. Her friend says:
b. She is non professional.
c. #She is unprofessional.

Non- is very productive and combines with all possible adjectives (and nominals) from all possible origins: *non-Turkish*, *nonintuitive*, *nonpsychiatric*, *non-colored*, *nonwhite*, …, though often it rather combines with derived adjectives than simplex adjectives.

[19]The status of *un-* with respect to level-ordering (Siegel 1979, Allen 1978, Williams 1981, Lieber 1981, Selkirk 1982, Kiparsky 1982, 1983, Pesetsky 1985 and Horn 1989) is unclear. For Horn (1989:273-286) *un-* has two faces: an *un-* that behaves like a Level I prefix and *un-* that behaves like a 'a word-level, neutral, Level II affix' with deverbal adjectives in *-able* and *-ible* and participles, like *unabsorbable*, *unadaptable*, *unabbreviated*, *unadapted*, *unavailing*, *and unbefitting* (examples from Jespersen 1917:144). I abstract away from the discussion with respect to Level-ordering and I consider *un-* a Q-morpheme, in spite of the fact that *un-* does not seem to give rise to contrariety or scalarity with these deverbal predicates. In chapter 7 I argue that Q^{Neg}-markers give rise to contradictory readings due to the absence of a scope position for the negative marker, i.e. QP, in the clausal spine. QP only projects in the presence of gradable predicates.

Evidence for the claim that *non-* belongs to a different group than *un* comes from stacking: *non-* can stack on *iN-*, *dis-* or *un-*, as in (49):

(49) a. nondisenfranchized, noninfinite
b. Nonunhappy people are the best. (Jim McCloskey, p.c.)

The Foc^{Neg}-marker in English is *not*. It gives rise to contradictory readings and functions as an adverbial modifier in (50) and a contrastive negative marker, in (51).

(50) Not long ago, he bought the house.

(51) a. John drank not coffee, but tea.
b. John drank tea, not coffee. (McCawley 1998:613)

When question tags are combined with a sentence containing Foc-negation, then the tags are affirmative. This suggests that the negation does not have scope over the tensed predicate, as illustrated by the examples in (52a)–(52b):

(52) a. Kim is NOT happy, isn't she?
b. Kim is NOT VERY happy, isn't she?

Supporting evidence for the claim that *not* is a Foc^{Neg}-marker, comes from the fact that it can be stacked on Q^{Neg}-markers and Deg^{Neg}-markers:

(53) a. Kim is NOT unhappy. (She is happy)
b. Kim is NOT nonprofessional. (She is professional)

Pol-negation in English is expressed by the same marker which is used for Foc-negation, namely *not*. *Not* expresses speaker denial and gives rise to contradiction. The question tags for a sentence as in (54) are positive, indicating that negation scopes over the tensed predicated.

(54) He is not happy, is/ *isn't he?

English also has a phonologically reduced form for *not*,*n't*, which can only express Pol-negation (and not Foc-negation), as illustrated by (55). I come back to the difference between both negative markers in chapter 7.

(55) He isn't happy, is/ isn't he?

As a Pol^{Neg}-marker *not* can stack on all other negative markers, illustrated in (56).

(56) a. He is not unhappy, is/*isn't he?
b. This sentence is not non-ambiguous, is/*isn't it?
c. He is not not happy, is / *isn't he?

Summarizing, English negative markers can be subdivided according to the four different types distinguished before. The Q^{Neg}-markers are *un*, *iN-* and *dis*, with *un* the productive Q^{Neg}-marker. The Deg^{Neg}-marker is *non-* and the negative marker *not* is syncretically used as a Pol^{Neg}-marker and a Foc^{Neg}-marker.

3.3.2.2 Modern French

Modern spoken French has three different negative markers with *pas* as a syncretic marker for Pol- and Foc-negation.[20]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 2	pas	pas	non	iN-, (dé(s))

Table 3.5: Spoken French

The most productive Q^{Neg}-marker in French is *iN-*, (57a)-(57b) (Zimmer 1964:48-51).[21] A more unproductive marker is *dé(s)-*, (58) (Zimmer 1964:47-48).[22] Both negative markers are of Latin origin.[23] Both *iN-* and *dé(s)* give rise to contrary readings and have a characterizing function.

(57) a. Il est in- tolérant.
he is neg- tolerant.
'He is intolerant.'
b. Il est im- moral.
He is neg- moral

[20]Many thanks to Amélie Rocquet for careful help with the data.

[21]*iN-* can also give rise to allomorphy, a property typical of Level I morphemes (Zimmer 1964, Siegel 1979, Allen 1978, Horn 1989), i.e. prefixes that are very close to the root. The rules for the phonological change are:

(i) a. in+ V → in-
b. in+m → im-
c. in+l → il-
d. in+r → ir-
e. in- or im- before p/b (relic of earlier phonetic assimilation). (Zimmer 1964:50)

In the rest of this study I will refer to these alternations with capital N- in *iN-*.

[22]Note that *dé(s)* is synchronically quite productively used as a reversative verbal prefix. (Zimmer 1964:48).

[23]I am again not taking the prefix *a-* into account, (ia).

(i) a. C'est a- grammatical.
it-is neg- grammatical
'It is ungrammatical.' .

According to Grevisse and Goosse ([1936] 1993) *a-* came via Latin into French, but according to ATILF (2003) the marker came almost aways directly via Greek into French. Since the marker is so unproductive, I do not take it into account.

'He is immoral.'
= He violates the rules of morality.
= qualifies what goes against morality and is done with a certain awareness of the immorality of the act.
(ATILF 2003).

(58) Il est dé- loyal.
he is neg- loyal
'He is disloyal.' (Zimmer 1964:47)

Sometimes these Q^{Neg}-markers even have a lexicalized meaning, a property typical of Level I-prefixes, as explained in 3.2.2. An example of *iN-* with its lexicalized and non-lexicalized meaning is illustrated in (59).[24] .

(59) a. Il est in- conscient.
he is neg- conscious
b. = 'having lost conscience, being deprived of conscience, the opposite of lucid' (ATILF 2003) (non-lexicalized)
c. = He is crazy. (lexicalized)

The markers *iN-* and *dé(s)-* discussed here cannot be stacked on each other. I consider this support to put them in the same group, i.e. to consider them Q^{Neg}-markers.

The Deg^{Neg}-marker is *non(-)*. It can give rise to contradictory readings and functions as a classifying negative marker,(60a)-(60b).[25]

[24]Like English *un-*, also French *iN* sometimes does not give rise to a contrary interpretation. This is the case in combination with adjectives that are participles or end - as in English - in *-ible* or *-able*. Moreover, in this case, *in-* does not always show the phonological change it usually does, as illustrated by (i).

(i) in- racontable.
neg- tellable
'too complicated to tell'

Horn (1989:293) considers this a consequence of the fact that *iN-* is ambiguous between a Level I and a Level II-affix. I do not take a stance in the Level-ordering debate, but I argue in chapter 7 that absence of a contrary interpretation for Q^{Neg}-markers is inherently related to the absence of a QP in the clausal spine.

[25]*Non* is usually a free morpheme, though it might have a closer connection to the adjectival root in some fixed expressions, in combination with nominals or denominal adjectives and adjectives, often in *-ible* or *-able* or adjectival participles in attributive position, as in (ic)-(ib) (Zimmer 1964).

(i) a. une pacte de non- agression
a pact of neg- agression
'a non-agression pact'
b. L'Oréal est le 7ème groupe neg- américain le plus admiré.
L'oréal is the 7th group neg- American the most admired
'L'Oréal is the 7th non-American group that is most admired.' (ATILF 2003)

(60) a. Le but de cette organisation est non -lucratif.
the goal of this organisation is neg -profit
'The of this organisation is non-profit.'

b. Les déchets sont non dangereux.
the trash-es are neg dangerous
'The trash is non-dangerous.'

Even though rarely and pragmatically odd, it is possible to stack Deg^{Neg}-marker *non* on a Q- marker, as in (61). The reason why this is odd might be that it is unusual to negate a predicate term twice with two semantically different markers.

(61) Son comportement était plutôt non im- moral.
his behavior was rather neg neg- moral
His behavior was rather non im- moral.

Non can also be used as a Foc^{Neg}-marker, (62a)-(62b). It is productive, but part of a more formal register of French.[26] Contrastive *non* does not give rise to lexicalized meanings, only to contradiction.

(62) a. Il est non arrogant, mais froid.
he is neg arrogant, but cold
He is not arrogant, but cold.

b. Il est froid, non arrogant.
He is cold, neg arrogant
'He is cold, not arrogant.

The formal Foc^{Neg}-marker *non* can be stacked on adjectives that are already morphologically marked with a Q- marker, (63a) - (63b) and with a Deg^{Neg}-marker, (64a)–(64b). Its stacking properties provide evidence to consider it as a Foc^{Neg}-marker.[27]

(63) a. Ses idées sont non im-morales, juste un peu bizarres.
his ideas are neg neg-moral, just a bit weird
'His ideas are not immoral, just a bit weird.'

b. La maladie est non in -curable, mais douloureuse.
the disease is neg neg -curable, but painful.
'The disease is not incurable, but painful.

c. une activité à but non- lucratif.
a-fem activity to goal neg- lucrative
'a non-commerical activity'

[26] I take it that an older register reflects an older stage of the language. I develop this idea for English in chapter 7 and for French in chapter 9.

[27] I do not consider formal *non* in the table overview at the beginning of this section, because it is not part of the register I consider and hence would lead to a misrepresentation of the syncretism patterns. If I were to consider the more formal variety of French, then the table would look different and also include *ne*. I refer the reader to chapter 9 for a discussion of *le bon usage French*. (Grevisse and Goosse [1936] 1993)

(64) a. Le but de cette organisation est non non-lucratif, mais commercial.
the goal of this organisation is neg neg-lucrative, but commercial.
The goal of this organisation is not non-profit, but commercial.

b. Les déchets sont non non dangereux, mais vraiment
the trashes are neg neg-dangerous, but really mortal
mortels si on les touche.
if one them touches.
'This trash is not non-dangerous, but really life-threatening if you touch it.'

In spoken French the common Foc^{Neg}-marker is *pas*, (65)- (66b). It expresses contradictory negation and functions as an adverbial modifier, (65), or a contrastive negation, (66a)–(66b).

(65) Il s'est arrêté pas loin de là.
he himself-is stopped neg far of there
'He stopped not far from there.'

(66) a. La réunion est, je trouve, pas longue, mais ennuyeuse.
the reunion is, I think, not long, but boring
'The reunion is — I think — not long, but boring.'

b. La maladie est curable, mais pas supportable.
the disease is curable, but neg bearable
'The is curable, but not bearable.'

It shows the same stacking properties as the formal Foc^{Neg}-marker. In the examples in (63a)–(63b) and (64a)–(64b) formal *non* can be replaced by *pas*.

Pas is also the Pol^{Neg}-marker. It can, but need not, co-occur with *ne*. *Ne* is optional and indicates the scope of the negative marker, as in (67).[28]

(67) Francois (ne) doit pas embrasser Valérie.
Francois ne must neg kiss Valérie

[28] According to Grevisse and Goosse ([1936] 1993) the more formal *point* behaves fairly similar as *pas*, (i).

(i) Il n'est point nécessaire d'espérer pour entreprendre ni de réussir pour persévérer.
it neg-is neg necessary of-to'hope for to-act nor of to-succeed for to-persevere
(William of Orange)

'It is not necessary to hope in order to act, nor to succeed in order to persevere.'

Point expresses a more vigorous negation than *pas* and its usage is regional (Grevisse and Goosse [1936] 1993:144X). It is one of the many items that at some point - precisely like *pas* - were used to reinforce *ne* when the latter negative marker was losing its negative force, i.e. as a typical stage in Jespersen's cycle (Jespersen 1917, Horn 1989, Van der Auwera and Neuckermans 2004, Zeijlstra 2004, Breitbarth 2009, Breitbarth and Haegeman 2010, De Swart 2010, Chatzopoulou and Giannakidou 2011, Chatzopoulou 2013, Breitbarth and Haegeman 2013, Willis et al. to appear). I come back to Jespersen's cycle and bipartite negation in chapter 9.

Francois doesn't have to kiss Valérie. (Rowlett 1998b:15)

In spoken French *ne* does not usually expresses negation on its own. I compare the different status of *ne* in spoken French and in *le bon usage French* (Grevisse and Goosse [1936] 1993), the written standard language, in more detail in chapter 9. For the present discussion of spoken Modern French, *ne* should not be considered in the table as an marker expressing negation on its own.

Summarizing, apart from being a Foc- marker, *pas* is definitely also a Pol- marker. *Non* behaves like a Foc- and Deg^{Neg}-marker. *iN-* and *dés* Q^{Neg}-markers.

3.3.3 Pattern 3: Chinese, MSA, Persian

3.3.3.1 Mandarin Chinese

Chinese has a syncretic marker *bù* for Pol- and Foc-negation and another marker *fēi(-)* which functions as a Deg^{Neg}- and Q^{Neg}-marker.[29]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 3	bù	bù	fēi(-)	fēi(-)

Table 3.6: Mandarin Chinese

Fēi(-) is used as a Q- and Deg^{Neg}-marker. On the one hand it gives rise to lexicalized readings, as in (68), which is a property of Q^{Neg}-markers. On the other hand, it functions as a classifying negative marker, yielding low scope contradictory readings, as in (69a)–(69b).

(68) a. Tā fēi -rén
he neg -human
he neg -human'
'He is inhuman/cruel'
≠ He is not human'

b. fēi-cháng
neg-daily
'extra-ordinary, unusual.'
≠ 'not daily.'

(69) a. fēi-shāngyè chǎnpǐn.
neg-commercial products
'the noncommercial products.

b. Tā de fāngfǎ shì fēi zhuānyè de.
he of method is neg profession of
'His method is nonprofessional.'

[29] Many thanks to Li Man for help with the data.

The use of *fēi(-)* goes back to Old Chinese. On its own it used to mean 'to be wrong' and it was the opposite of *shì* 'to be right'. *Fēi-* is nowadays often associated with literary style.[30]

The Foc^{Neg}- and Pol^{Neg}- marker are also morphologically syncretic in Chinese: *bù*. When *bù* precedes the finite verb, as in (70a), it has sentential scope. When it follows the verb on the other hand, it does not take scope over the tensed predicate and it triggers a low scope contradictory reading or a contrariety reading, as in (70b).

(70) a. Tā bú shì kuàilé.
(s)he neg is happy.
'She is not happy.'

b. Tā shì bú kuàilé.
(s)he is neg happy.
'She is NOT happy.'
'She is unhappy.'

With adjectival predicates, the copular verb is usually not overt. Hence, the same sentence can give rise to a low scope contradictory negation or sentential negation on the one hand and a contrariety negation, as illustrated by the examples in (71a)-(71e).

(71) a. Tā bù kuàilé.
(s)he/he neg happy.
'She is not happy.'
'She is unhappy.'

b. Tā bù zhōngchéng
(s)he neg honest
'She is not honest.'
'She is dishonest.'

c. Tā bù zhōngchéng
(s)he neg loyal
'He is not loyal.'
'He is disloyal.'

d. Tā bù kuānróng
(s)he neg tolerant
'He is not tolerant.
'He is intolerant.'

e. Tā de fāngfǎ bú qiádáng
(s)he poss.de method neg appropriate
'His method is not appropriate.' 'His method is inappropriate.'

[30]The marker *wù* is also frequently used to create adjectival-like negative predicates. Its meaning is reminiscent of English *-less* and Hungarian *-tElEn*. It always combines with a nominal predicate expressing a concrete thing which then gives rise to an adjective expressing 'the property of being deprived of a certain thing'.

In (72) the Pol- and Foc^{Neg}-marker *bù* are stacked, supporting that *bu* belongs to two different types of negative markers: the Foc-group and the Pol-group.[31]

(72) Tā jí bú shì kuanrong, de yě bú shì bù kuānróng de.
She and neg is tolerant, DE also neg is neg tolerant
'She is neither tolerant nor intolerant.'

Given the fact that there is a specific marker for the expression of what we identified as Q- and Deg-negation, I conclude that bù is a Pol- and Foc^{Neg}-marker, but not a Deg- and Q^{Neg}-marker. In chapter 5 I account for why contrary readings can arise with Pol- and Foc^{Neg}-marker.

I conclude that Chinese has *bù* as a Pol- and Foc- marker. The marker for the Deg- and Q-group is *fēi(-)*.

3.3.3.2 Modern Standard Arabic

In Modern Standard Arabic (henceforth MSA) *ghayr* behaves like a Q- and Deg^{Neg}-marker. The marker *laa* on the other hand is syncretic for Pol- en Foc-negation.[32]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 3	laa	laa	ghayr	ghayr

Table 3.7: Modern Standard Arabic

[31]Chinese has another frequently used marker, *méi*. This marker always co-occurs with *yǒu* and literally means 'not have'. It is the typical negative marker for all tenses that express a completed or accomplished action, irrespective of tense (Dan 2006, Po-Ching and Rimmington 2006 [1997]), (ia)-(ib), and it is used to negate adjectives that consist of *yǒu* and a noun, as in (iia).

(i) a. Tā méi(yǒu) qù ōzhōu.
He neg(-have) go Europe
'He did not go to Europe.'

b. Shéi méi(yǒu) tīng zuótian de guûangbō?
who not(-have) listen yesterday DE broadcast
'Who didn't listen to yesterday's broadcast?'
(Po-Ching and Rimmington 2006 [1997]:52)

(ii) a. Zhéi běn xiǎoshuō měi yǒu yísi
this CLASS novel neg have meaning
'This novel is not interesting'
(Po-Ching and Rimmington 2006 [1997]:52)

b. Tā měi yǒu yísi
he not have light
'He is unconscious.

Méi- in combination with the (often elided) verb *yǒu* - is an aspect-related negative marker. I consider it a suppletive marker for the Pol^{Neg}-marker *bù* when it combines with *yǒu*. I do not discuss the use of *méi* further here.

[32]Many thanks to Hicham El Sghiar for help with the data.

The Q- and Deg^{Neg}-marker in MSA is *ghayr*.[33] *Ghayr* expresses contrariety and functions as a characterizing negative marker on the one hand, as in (73a)–(73c). On the other hand it can also express contradictory negation and function as a classifying negative marker, as illustrated by the example in (74a)–(74b).

(73) a. ghayru muqaddasin.
neg holy
'unholy.' (Ryding 2005:275)

b. ghayru munaasibin.
neg suitable
'inappropriate.'

c. ghayru mubaashirin
neg direct
'indirect' (Ryding 2005:649)

(74) a. ghayr mutadayin.
neg religious
'He is irreligious/ non-religious.'

b. ghayru islaamiyyin
neg Islamic
'non-Islamic' (examples adapted from Ryding 2005:649)

Ghayr scopes only over the predicate term, not over the tensed predicate. Ghayr is structurally close to the adjective it modifies: it is the first term in a special construction, called the adjectival construct (Alsharif and Sadler 2009, Al Sharifi and Sadler 2009), construct phrase or iDaafa (Ryding 2005:223).[34]

The Foc- and Pol^{Neg}-marker is *laa*. As a Pol^{Neg}-marker *laa* scopes over the tensed predicate, as in (75a). In this case it is a regular contradictory negative marker, giving rise to speaker denial.

(75) a. laa 'afhamu maadhaa taquulu.
neg I.understand what you.saying
'I do not understand what you are saying.'

[33] Arabic is a Semitic language and the term Arabic most commonly refers to Modern Standard Arabic (MSA) or Classical Arabic (literary Arabic) (CA). Sometimes Arabic also refers to the vernaculars spoken in all the different regions of the Arab world. MSA and CA are not so different from each other. MSA is the spoken and written language of television, radio, press, books, whereas CA was the written language until the 18th century. The main differences between the two varieties of Arabic are stylistic and in terms of vocabulary. Lots of new vocabulary have entered the language to meet the needs of modern life. With respect to negation there is hardly any difference between MSA and CA. Apart from MSA, all speakers of Arabic master at least one regional vernacular which is their mother tongue and which often differs a lot from MSA and CA (Ryding 2005).

[34] The construction with *ghayr* is relatively special since construct phrases normally consist of two nominals, whereas adjectival constructs normally have the adjective preceding the noun. In the construct with *ghayr* the first part is a nominal, which is the negative marker *ghayr*, whereas the second part is an adjective or adjectival participle.

b. laa ʾu-daxxinu.
neg I.smoke
'I do not smoke.' (Ryding 2005:644)

However, *laa* can also be used as a predicate negative marker, not scoping over the tensed verb (Ryding 2005), as illustrated in (76a)–(76b).[35]

(76) a. laa lwilaayaatu lmuttaHidatu wa- laa littiHaadu lsuufiyaatiyyu
neg the.states the.united and- neg the.union the.Soviet
'neither the United States nor the Soviet Union'
(Ryding 2005:646)

b. laa ʔahad
no one
'No one' (Aoun et al. 2010:36)

Arabic also has a negative existential verb, or a negative copula, *laysa* 'to not be' (see also Horn 1989:449,Lucas 2009:20).[36] Ouhalla (1993) suggests it consists of *laa*, a verbal copula *s* and agreement. This copular verb carries inflection that is also found on perfective past verbs (Aoun et al. 2010:114–115). However, it only negates the present tense.[37] The verb *lays-a*, therefore, is specialized and limited to negating the present tense of *be*. I consider it a suppletive form for the combination of the Pol^{Neg}-

[35]In (ia)-(ic), *laa* is not used in combination with a finite verb, but it is used in a compound construction. It thus seems that *laa* is sometimes capable of expressing Deg- and/or Q-negation. The existence of *laa* in these compounds can point to older or newer layers of the language. It could also mean that Arabic has two available patterns for Deg- and Q-negation. More research into Arabic would be necessary to understand this. For the purpose of this research I take it that *ghayr* expresses Q- and Deg-negation, though nothing crucially hinges on this.

(i) a. laa-faqaariyy
neg-vertebrate.adj
'invertebrate'

b. laa -nihaaʾiyy
neg- end-adj
'never-ending'

c. Harakatun laa- tahdaʾu qurba lmasjidi
motion neg -stopped near the.mosque
'non-stop motion/movement near the mosque'
(adapted examples from Ryding 2005:645)

[36]Croft (1991) pointed to the existence of a negative existential cycle: in stage A languages use the verbal negator in combination with the existential verb, in stage B they use a special 'suppletive' negative existential predicate which differs from the verbal negator and then in stage C the negative existential predicate is used as a verbal negator. *Laysa* is such a negative existential form which co-occurs with the verbal negator *laa* in MSA. MSA seems to be in Stage B of the Croft-cycle.

[37]Like with other verbs, the negation of the perfect or past tense happens with *lam*. For the future tense *lan* is used (Ryding 2005:647, Lucas 2009:20). I consider *lam* and *lan* tense related allomorphs of *laa*. They belong to the Pol-group and are in complementary distribution with *laa*.

marker *laa* and the existential verb 'be'.

(77) a. sum^{c}atuka lays-at jayyidat-an.
reputation.your neg-is good.
Your reputation is not good. (Ryding 2005:643) .

Summarizing, *ghayr* expresses Q-negation and Deg-negation and *laa* expresses Foc- and Pol-negation. In copular sentences the Pol^{Neg}-marker and the existential verb 'be' are replaced by the suppletive form *laysa*.

3.3.3.3 Persian

Persian has a syncretic form *qeyr-* to express Q- and Deg-negation and *na* to express Pol- and Foc-negation.[38]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 3	na	na	qeyr-	qeyr-

Table 3.8: Persian

Persian uses *qeyr-* to express Q- and Deg-negation, (78a)-(78h). *Qeyr-* is derived from the Arabic noun *ghayr* which means 'other than','non', 'un-'. It either expresses contrary negation and has a characterizing function, as in (78a)–(78e), or it express contradictory negation with a classifying meaning, (78f)–(78h).[39]

[38] I am very much indebted to Mansour Shabani and Karimouy Mitra Heravi for a lot of help with the data.

[39] There is another negative marker *nā*, with a long *ā*, spelled differently in Persian, which can be prefixed onto adjectival predicates and which gives rise to contrary readings, sometimes even lexicalized meanings, as in (ia)-(id).

(i) a. nā-binā
neg-seeing
'blind'

b. nā-omia
neg-hope
'despondent' (Reuben 1951:46)

c. U adame nā-rāhati ast.
he man neg- relaxed is
'He is a sad man.'

d. metod- e u nā- monāseb ast.
Method- Ez his neg appropriate is
'His method is inappropriate'

These data suggest that Persian has another strategy for Q- and Deg-negation which co-exists alongside the strategy with *qheyr*, comparable to how English also has several markers for Q-negation.

Moreover, the Foc^{Neg}-marker *na* can be stacked on this other *nā* in (ii).

(ii) U adame na nā- rāhat, balke rāhati ast.
he man neg neg- happy, but happy is.

(78) a. U qeyr- e herfehi ast.
He neg- Ez professional is
'He is unprofessional.'
'He is nonprofessional.'

b. U qeyr- e tabi'i ast.
He neg- Ez natural is
'He is unnatural'.

c. metod- e u qeyr- e tejari ast.
Method- Ez his neg- Ez commercial is
'His method is non-commercial.'

d. U qeyr- e q*ā*bel- e ehter*ā*m ast.
He neg- Ez able- Ez respect is
'He is disrespectful.'

e. U adame qeyr- e- ensăni ast.
he man neg- Ez- human is
'He is an inhuman/unhuman man.'

f. U adame qeyr- e- mazhabi ast.
he man neg- Ez- religious is
'He is a non-religous person'

g. Raft*ā*r- e u qeyr- e amrikai ast.
Behavior- Ez his neg- Ez American is
'His behavior is un-/non-American'

h. qeyr- e daneshgahi
neg- Ez university-adj
'non-academic'

Qeyr- does not scope over the tensed predicate. It is in a complex predicate construction with the adjective. The close relationship between the negative marker and the adjective is expressed by the Ez*ā*fe (Ez in the glosses).[40]

The Foc- and Pol^{Neg}-marker in Persian is *na*. When *na* takes scope over the finite verb, by affixing onto it, it is a Pol^{Neg}-marker (79). [41]

'He is not sad, but happy.'

More data research is necessary to see how productive this strategy is compared to the *qeyr*--strategy. Moreover, more stacking-data are needed to decide on the precise relation between *nā* and *qheyr*. For the purpose of this dissertation I do not consider this long *nā* in the overview of the syncretism patterns. I leave this issue for further research.

[40]The Ez*ā*fe following *qeyr-* is typical of Iranian languages. It connects a noun, adjective or preposition with its modifier. The function of the Ezafe is not yet well-understood and many different approaches have been taken to explain how the Ez*ā*fe regulates the relation between a noun, adjective or preposition and its complement. Proposals vary from considering it a contracted clause (Tabaian 1974), a non-verbal EzafeP (Moinzadeh 2005), a case marking head (LarsonYamakido2005), a PF-phenomenon (Samiian 1983, Ghomeshi 1996), etc. It is beyond the scope of this dissertation to go into this.

[41]When *na-* prefixes onto the 3rd person singular of the verb *budan* 'to be', namely *ast*, as in (80a)-(80b), then the combination of the negative marker *na* and *ast* becomes *nist*. *Ni-* is thus an allomorph of *na* (Lambton 2003:12). Two other allomorphs are (Kwak 2010): *ne*, which occurs when negation

(79) Diruz na- raft.am madrese
Yesterday neg- went.1sg school
'I didn't go to school yesterday.'
(Kwak 2010:623)

(80) a. U ādam- e rāhati ni- st
(s)he man- Ez relaxed neg-is
'He is not a relaxed person.'

b. u ba.vafa ni- st
(s)he with.loyalty neg- is
'He is not loyal'

Na can also be used as a Foc^{Neg}-marker, a 'constituent negation' according to Kwak (2010). In (81a)-(81d) *na* functions as a contrastive negation, giving rise to contradictory negation. In (81e)–(81f) *na* is used as an adverbial modifier.

(81) a. Ali ketāb-o varaq zad.ø, na- xarid.ø.
Ali book-rā page hit.3sg neg- bought.3sg.
'Ali turned the pages of the book, but did not buy it.'

b. Na man chini sohbat mi-kon-am, na ānhā
Neg I Chinese speak dur- do- 1sg neg they
'Neither I nor they speak Chinese.'

c. Man ketāb mi-xun-am, na majale
I book dur-read-1sg, neg magazine
'I'm reading a book, not a magazine.'

d. U na be Bruxel balke be Tehran raft- ø.
he neg to Brussels but to Tehran went- 3sg
'He went not to Brussels, but to Teheran.'

e. Ruzi do sā'at ketāb mi- xun- am, na har ruz.
A.day two hour book dur- read- 1sg neg every day.
'I read a book two hours a day, not every day.'
(Kwak 2010:624)

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precedes the progressive marker *mi-* (Taleghani 2006, 2008), as in (ia) and *ma*, which can occur with imperatives,(ib), though it is hardly ever used. I consider all these negative markers in complementary distribution with the Pol^{Neg}-marker. They replace *na* when *na* co-occurs with mood, tense or aspect related features.

(i) a. Mariam ne- mi- tavānest- ø taklif ro anjām be-dah-ad.
Mariam neg- dur- could- 3sg task rā completion subj-give-3sg.
'Mariam could not complete the task.'.
((Kwak 2010:622))

b. Dige ma-pors-ø.
Any-more neg-ask-2sg.
'Don't ask any more.' (Kwak 2010:623)

f. na chandān pishtar
neg long ago
'not long ago'

The Foc^{Neg}-marker *na* can stack on *qeyr-*,(82). Stacking *qeyr-* on *na-* is not possible.

(82) U adame na qeyr- e- mazhabi, balke mazhabi ast.
he man neg neg- Ez- religious, but religious is
'He is not an irreligious person, but a religious person.'

Summarizing, *na* is the Pol- and Foc^{Neg}-marker in Persian and *qeyr-* functions as a Q- and Deg^{Neg}-marker.

3.3.4 Pattern 4: Moroccan Arabic

The variety of Northern Moroccan Arabic (MA) I describe here has a syncretic marker for Foc-, Deg- and Q-negation: *m*uši and uses an embracing negative marker or bipartite negation to express sentential negation on the finite verb: *ma…ši*.[42]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 4	ma (… ši)	muši	muši	muši

Table 3.9: Moroccan Arabic

Q-, Deg- and Foc-negation is expressed by one negative marker: *muši*. The marker gives rise to contrary negation, functioning like a characterizing negative marker, as in (83a)–(83c).

(83) a. Howa muši diani.
he neg religious
'He is irreligious.

b. Howa muši ferħan.
He neg happy
'He is unhappy.'

c. Tasarufaat djalu muši mezjanin.
act-pl of-him neg good.
His behavior is not good.

d. Eliqtiraaħ djalu muši munaasib.
proposal of-him neg suitable
His proposal is unsuitable.'

The marker also functions as a classifying negative marker, as in (84).

[42]Many thanks to Hicham El Sghiar for help with the data. My informant comes from from Chefchaouen, Northern Morocco.

(84) Elhadaf dyel munaddama kullu muši tijari
goal of-the organisation completely neg commercial
The goal of the organisation is completely non-commercial.

Moreover, it can be used in contrastive contexts, like (85).

(85) Howa muši furħan, rah mʕassub.
he neg happy, is sad.
He is NOT happy, he is sad.

In all these cases the negative marker does not take scope over the tensed predicate. Its scope is restricted to the untensed predicate and its predicate terms.[43]

Pol-negation on the other hand is expressed by means of a bipartite construction *ma* … ši in the variety of Northern MA under discussion, as in (86a)-(86c).[44]

(86) a. Howa ma- rah- ši diani.
He neg- be.3sg- neg religious
'He isn't religious.

b. Howa ma- rah- ši ferħan.
he neg- be3.Sg.- neg happy.
'He is not happy.'

c. Ma- andou- ši l akhlaaq.
Neg- have- neg the moral
'His behavior isn't moral.'

However, given that *ma* can also co-occur with other negative indefinites as in (87) and that *ši* cannot be used on its own as a negative marker in Nothern MA — as opposed to French *pas* in *le bon usage French* — I argue that only *ma* is a real Pol^{Neg}-marker, be it 'deficient' (cf. chapter 7 and 9).[45] *Ši* thus still behaves like a negative polarity item (NPI) in the variety of MA under discussion. This is not surprising, given that it still occurs in its full form in MA, compared to the other Arabic vernaculars where it often occurs in a phonologically reduced form š(Heath 2002).[46]

(87) Ma kayn walou
neg is anything
There is nothing.'

[43]The negative marker arose historically from the contraction of the third person masculine singular *hu* with the negative markers *mā-hu-ši* (Holes [1995] 2004, Benmamoun 2000, Lucas 2009)

[44]Northern MA thus has entered stage II of Jespersen's cycle (cf. Lucas (2009) for discussion of Jespersen's cycle in Arabic vernacular and 9 for a discussion of bipartite negation in French.

[45]The marker *ma* goes back to the MSA and CA marker *mā*, which is extremely rare in written language. In other varieties of MA and other varieties of the Arabic vernacular in general this *ma* is the regular negative marker. In MA *ma* is not not lengthened.

[46]*š* is derived from the NPI šayʕ'thing' in CA. In most varieties of Arabic *ši* became a phonologically reduced enclitic when it entered stage II of Jespersen's cycle (Lucas 2009).

Sumarizing, *muši* is syncretic for Q-, Deg- and Foc-negation, whereas *ma* combined with an NPI like *ši* is used for the expression of Pol-negation.

3.3.5 Pattern 5: Hungarian

Pol-, Foc- and Deg-negation are expressed by a syncretic marker *nem*. The Q^{Neg}-marker is the suffix *tElEn*.[47]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 5	nem	nem	nem	-tElEn

Table 3.10: Hungarian

The Q^{Neg}-marker in Hungarian is the suffix *-tElEn* which literally means 'lacking'.[48] It expresses contrariety negation and functions as a characterizing negative marker, illustrated by the examples in (88).

(88) a. A módszere szakszerű- tlen.
the method.Poss.3SG professional -lacking
'His method is unprofessional.'

b. Ő boldog- talan.
(s)he happy- lacking
'(S)he is unhappy.

c. Ő őszinté- tlen
(s)he honest.Adj.- lacking
'(S)he is dishonest.

Evidence for the claim that -tElEn is a Q^{Neg}-marker also comes from the fact that it can give rise to lexicalized meanings, as in (89).

(89) A viselkedése ember- telen
the behavious.poss.3sg. human- lacking
His behavior is inhuman/cruel.'

In section 3.2.2 we discussed the connection between lexicalized meanings and structural closeness between an affix and the predicate. The scope of the suffix is restricted to the predicate term.[49]

[47] I am very grateful to Adrien Jánosi for help with the data.

[48] The reason for E in the representation of the suffix is that the suffix undergoes vowel harmony in accord with the stem: when the stem has a front vowel, the suffix will adapt and the same with back vowels. (Rounds 2001).

[49] This suffix can also be used on nouns, (ia)- (ic), and verbs,(iic).

(i) a. A gyerek törvény- telen.
the child law-lacking
'The child is unlawful.'

Sometimes, the contrary meaning expressed by *-tElEn* can be expressed by loan-prefixes: Latin *iN-* or Greek *a-*, but this only happens with foreign words (90a) and their usage is marginal.

(90) a. a- szexuális
neg- sex.adj.
'without a (sign of) wish for sex'

b. in- toleráns
neg- tolerant
'intolerant'

Sometimes *-tElEn* and a loanprefix can both occur with the same stem, as in (91a)-(91b). In this case the negative loanprefix goes on the adjective and *-tElEn* combines with the noun, without any change in meaning.

(91) a. ir- racionális
neg- rational
'irrational'

b. ráció -tlan
ratio-N -lacking
'irrational'

The Deg-, Foc- and Pol^{Neg}-marker is *nem*. As a Deg^{Neg}-marker, *nem* functions as a classifying adjective, (92a).

(92) a. Nem kereskedel.mi termékek
neg commercial product.PL
'non -commercial products'

As a Deg^{Neg}-marker *nem* takes low scope. Its low scope can be illustrated by the examples in (93). In the presence of a copular verb like *seem nem* occurs in a structurally dif-

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b. Ő erkölcs- telen
(s)he moral- lacking
'(S)he is amoral/asocial.'

c. Ő eszmél- etlen.
(s)he conscious -lacking
'S(h)e is unconscious.'

(ii) a. ismer- etlen
know -lacking
'unknown'

b. kér- etlen
ask.for- lacking
'unrequested'

c. vár- atlan
expect- lacking
'unexpected'

ferent position depending on whether it instantiates Deg- or Pol-negation. When *nem* occurs below the adverb *teljsen* 'completely', then it expresses Deg-negation. However, when *nem* scopes over the copular *tünt* and *teljesen*, it gives rise to sentential negation, (93c). The stack-example in (93c) shows *nem* in its different positions, giving rise to Pol- and Deg-negation.

(93) a. A projekt teljesen nem-kereskedelminek tűnt.
The project completely neg-commercial.DAT seemed.3SG
'The project seemed completely non-commercial.'

b. A projekt neg tűnt teljesen kereskedelminek.
The project not seemed.3SG completely commercial.DAT
'The project didn't seem completely commercial.'

c. A projekt neg tűnt teljesen nem-kereskedelminek.
The project not seemed.3SG completely non-commercial.DAT
'The project didn't seem completely non-commercial.'

As a Foc^{Neg}-marker *nem* can function in a contrastive context, (94a)–(94b), and as an adverbial modifier, as in (94c). When it functions in a contrastive context it is in the focus field of a sentence, which is in preverbal position in Hungarian.

(94) a. János nem BOLDAGTALAN, hanem BOLDOG.
John not unhappy but happy
'János is not unhappy, but happy.

b. János nem A FELESÉGÉVEL táncolt.
Janos neg the wife.poss.3sg.with danced
'It was not his wife that John danced with.' (Kiss 2004:130)

c. Nem mindenki A FELESÉGÉVEL táncolt.
neg everybody the wife.poss.3sg.with danced.
'Not everybody danced WITH HIS WIFE.' (Kiss 2004:130)

The Foc^{Neg}-marker also sometimes expresses readings which are in other languages associated with Deg-negation, as in the example in 6.2.3, where *nem* functions as a classifying adjective, but occurs in the focus-field in (95a). (95b) shows the same sentence with regular sentence negation.

(95) a. Mi nem keresztények vagyunk.
we neg Christian are.1pl
'We are non-Christian.'
'It is not Christian that we are.'

b. Mi nem vagyunk keresztények.
we neg are.1pl Christian.pl
'We are not Christian.'

As a Pol^{Neg}-marker it takes sentential scope over the entire tensed predicate, (96).

(96) János nem táncolt a feleségével.
John not danced his wife-with.
'John didn't dance with his wife.'

A test which provides extra support for the low scope position of *nem* as a Deg^{Neg}-marker compared to the scope positions of Foc- and Pol^{Neg}-markers is to see how *nem* as a Deg^{Neg}-marker interacts with the NPIs *senki* 'anybody' and *semmi* 'nothing'. Foc and Pol-negation can license these NPIs in subject position, as shown in (97a)-(97b).

(97) a. Senki sem [VP hívta fel a feleségét]
nobody neg called up his wife
'Nobody called up his wife.'
b. Senki sem [FP A FELESÉGÉT hívta fel]
nobody neg his wife-ACC called up
'Nobody called up HIS WIFE.'

However, Deg^{Neg}-marker *nem* cannot license *semki*, as in (98a), unless when there is an extra *nem* or *sem* inserted on the verb, as illustrated in (98b).[50]

(98) a. *Semmi tünt teljesen nem-kereskedelminek.
Anything seemed.3SG completely neg-commercial.DAT
b. Semmi sem tünt teljesen nem-kereskedelminek.
Anything neg seemed.3SG completely neg-commercial.DAT
'Nothing seemed completely non-commercial.'

These data support the fact that *nem* has different readings which coincide with different positions. [51]

Summarizing, Hungarian has the syncretic marker *nem* for Pol-, Foc- and Deg-, but has a different Q^{Neg}-marker, *-tElEn*.

[50] Foc- and Pol^{Neg}-marker *nem* typically changes into *sem* under the influence of the indefinites *senki* and *semmi*.

[51] Hungarian, like MSA, has a suppletive negative form for the existential predicate *van* 'be', i.e. *nincs*, *nincsen*; the plural form is *nincsenek* corresponding to the affirmative *vannak*. So when the sentential negative marker *nem* combines with the 3psg of the existential 'be', a suppletive form is used, as illustrated by the examples in (ia)-(ic).

(i) a. Attila nincs jól.
Attila neg-is well
Àtilla is not well.'
b. Attila nincs a házban.
Attila neg.be.3sg. the.house.in.
'Atilla is not in the house.'
c. Nincsenek régi könyvek a szekrényben.
neg.be.3p.pl old books the.closet.in
'There are no old books in the closet.' (Rounds 2001:270)

3.3.6 Pattern 6: Czech

Czech is fully syncretic. The same negative marker *ne* is used for Pol-, Foc-, Deg- and Q-negation.[52]

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Pattern 6	ne-	ne	ne-	ne-

Table 3.11: Czech

As a Q^{Neg}-marker *ne-* attaches onto an adjectival predicate. It gives rise to contrariety readings, (99a) - (99b), and sometimes even to lexicalized readings, (100a)-(100b), a sign of structural closeness.[53]

(99) a. Je ne- loajální.
is neg- loyal
'He is disloyal.'

b. Je ne- tolerantní.
is neg- tolerant
'He is intolerant.'

(100) a. Je ne- přátelský
is neg-friendly
'He is hostile'/ 'He is adverse'

b. Je ne- mocný.
he neg- powerful.
'He is ill.' (Kovarikova et al. 2012:824)

Ne- can also function as a Deg^{Neg}-marker and give rise to contradictory classifying readings, as in (101a)-(101d). Sometimes both Q- and Deg-readings are possible, (101d).[54]

[52]Many thanks to Jakub Dotlačil and Radek Šimík (Czech) for help with the data.

[53]Some foreign prefixes, like Greek *a-* and Latin-based *iN-* can be interchangeably used with *ne-* in combination with a stem of foreign origin. However, these adjectives are rarely used in Czech and there is no noticeable meaning difference between (ia) and (ib).

(i) a. On je ne- morální.
he is neg- moral
'He is amoral/immoral/non-moral.'

b. On je a- morální.
he is neg- moral.
'He is amoral.'

c. *On je im- morální.
he is neg- moral.

[54]Admittedly, it is hard to know whether the Deg- marker exists in Czech, since if it exists, it is syncretic and one of the main ways to test the presence of a Deg- marker is to see whether it can select for a negative predicate that already consists of a Q- marker. However, when Q- and Deg- markers are syncretic, they never stack.

(101) a. Jeho metoda je ne- profesionální.
his method is neg- professional
'His method is nonprofessional.'

b. Jeho metoda je ne- komerční.
his method is neg- commercial
'His method is noncommercial.'

c. Jeho metoda je ne- adekvátní.
his method is neg- adequate
'His method is inadequate.'

d. Je ne- americký.
is neg American
'He is un- American.'
'He is non- American.'

Ne can be used as a Foc^{Neg}-marker as well. This is clear from an example like (102), in which *ne* functions as a contrastive negative marker. In (102) *ne* stacks on another *ne* which behaves like a Q^{Neg}-marker, illustrating that Foc-negation takes scope in a higher position than Q-negation. Like other Foc^{Neg}-marker, *ne* can also be used as an adverbial modifier, as in (103).

(102) On je ne ne- šťastný, on je šťastný.
he is neg neg- happy, he is happy.
He is not unhappy, but happy.'

(103) a. Oni jsou tři ne zrovna ne- šťastní muži.
they are three neg exactly neg -happy men.
'They are three not really unhappy men.'

b. Ne dnes, zítra.
neg today, tomorrow
'Not today, but tomorrow.' (Naughton 2005:212)

When *ne-* prefixes onto the copular verb *být* 'to be' (Naughton 2005:134-135), it gives rise to Pol-negation, (104a).[55] The Pol^{Neg}-marker *ne-* can be combined with *ne* as a Foc^{Neg}-marker and with *ne-* as a Q^{Neg}-marker, (104b), illustrating the different scope positions for the syncretic marker.

(104) a. Ja ne- jsem šťastný.
I neg- am happy.
'I am not happy.'

b. On není ne ne- šťastný, ale smutný
he neg- is neg neg happy, but sad.
'He isn't not unhappy, but sad.'

Summarizing, Czech is syncretic with respect to the different classes of negative mark-

[55]When negation combines with the third person singular of *být*, i.e. *je*, the result is a suppletive or irregular negative form *není*(Naughton 2005:134-135, Janda and Townsend 2002:37).

ers distinguished above. The negative marker *ne-* is used throughout, apart from some loanwords which can be prefixed with Latin and Greek *iN-* or *a-*.

3.4 Conclusion

The table in 3.12 presents an overview of the languages discussed and the syncretism patterns in these languages. When we order the negative markers per language according to their stacking properties, i.e. going from those which take widest scope to those which take narrowest scope (or the other way around), no non-contiguous syncretisms can be detected. All syncretisms detected are contiguous syncretisms. As we discussed in chapter 2 for case the absence of non-contiguous syncretisms is meaningful and points to hidden layers of syntactic structure. In the next chapter I explore how this can be translated into syntactic structure.

	Pol^{Neg}-marker	**Foc^{Neg}-marker**	**Deg^{Neg}-marker**	**Q^{Neg}-marker**
Greek	dhen	oxi	mi	a-
English	not	not	non	un-
French	pas	pas	non	iN-
Chinese	bù	bù	f*ēi*	f*ēi*
MS Arabic	laa	laa	ghayr-	ghayr-
Persian	na	na	qheyr-	qheyr-
Moroccan Arabic	ma (ši)	muši	muši	muši
Hungarian	nem	nem	nem	-tElEn
Czech	ne-	ne	ne-	ne-

Table 3.12: Syncretism patterns

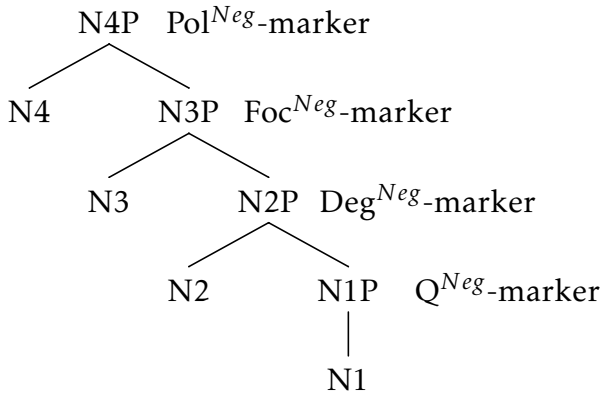
4

Analysis: Internal syntax of negation

4.1 Introduction

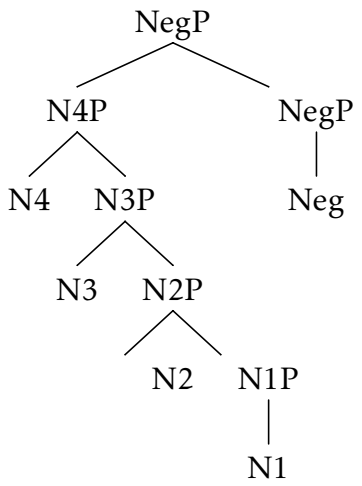
In this chapter I interpret the syncretisms we detected for the sample of languages discussed in chapter 3 in terms of the nanosyntactic program introduced in chapter 2. I show how the syncretisms and the nanosyntactic methodology provides insight into the internal structure of a negative morpheme. This leads to the radical decomposition of the negative morpheme into a layered structure as in (14). Finally, I propose that negation can be best understood as a Split NegP, which is featurally and structurally complex, (2).[1]

(1)



[1]The idea that negation is featurally complex is also present in Haegeman and Lohndal (2010:199) and Poletto (2008).

(2)



The proposal developed in this chapter and in the rest of this dissertation is reminiscent of work proposed by Poletto (2008). She proposed a structurally complex Split NegP on the basis of Italian dialects. I discuss her work — and the differences and similarities between our proposals in chapter 4 and 10. In the next section I explain step by step what the different arguments and assumptions are for the structures in (34) and (2).

4.2 The nanosyntax of negation

4.2.1 The negative sequence

In this section I explain how I arrived at the negative sequence, (3), which I used to present the syncretism data in section 3.3. I show that the sequence in (3) follows from the detected syncretisms patterns and more in particular from a constraint on syncretisms, namely that they only target contiguous regions.

(3) Pol Foc Deg Q

From the theoretically possible orders for the sequence, the syncretisms between the negative markers point to only two orders. The two sequences are each other's mirror and they show the same contiguity relationships, i.e. Q is closer to Deg than to Foc and Pol is closer to Foc than to Deg.

The core assumption within nanosyntax is that syncretism patterns point to structural relatedness and closeness, i.e. syncretic markers are closer to each other than non-syncretic markers. If we apply this to the syncretism patterns that we observed in the nine different languages, then a typological generalisation emerges, as stated in (4):

(4) If a language has marker X to give rise to *Q-negation* and that language has marker X to give rise to *Pol-negation* then *Deg-negation* and *Foc-negation* will

also be expressed by means of marker X.

The generalisation states 1) that Pol- and Q^{Neg}-markers are structurally furthest apart and thus at the outer end of the negative sequence and 2) that all detected syncretisms in the sample are contiguous, i.e. they are always between negative markers that are structurally contiguous. Concretely this means that there can be no syncretism between a Pol- and Q^{Neg}-marker, unless when the Deg- and Foc^{Neg}-marker are also syncretic with the Pol- and Q^{Neg}-marker (as is the case in Czech). With respect to the order of Foc- and Deg^{Neg}-markers, we saw in 3.3 that there are languages which are syncretic between Q- and Deg-negation (Chinese, Persian, MSA) and between Foc- and Pol-negation (Chinese, Persian, MSA, English, French, Czech, Hungarian), but we did not find any language which was syncretic between Q- and Foc-negation unless Deg-negation was also syncretic (as in Moroccan Arabic). This shows that Q- and Deg^{Neg}-markers are structurally closer, than Q- and Foc^{Neg}-marker. Consequently, by applying the idea that syncretisms point to structural relatedness to the four types of negative markers distinguished in each language, a unique order for these four types of negative markers was formed. I refer to this order as the negative sequence or the Universal Negation Contiguity Hypothesis, (5).[2]

(5) The Universal Negation Contiguity Hypothesis

a. Negation syncretism targets contiguous regions of negative markers invariant across languages.

b. The negation sequence: Pol — Foc — Deg — Q

However, the order to which the syncretism patterns point is not just an arbitrary order. The order respects the scope and stacking properties of these negative markers: from wide scope to narrow scope (or the other way around). As such, the negative sequence does not only follow from the syncretism patterns, but is also independently given on the basis of the scope properties of natural language negation.

Summarizing, the negative sequence as presented throughout the discussion in 3 is determined by the syncretism patterns detected for the nine different languages and the idea that syncretisms point to contiguity or structural relatedness. From the 24 possible sequences for the four types of negative markers the two negative sequences

[2]The Hypothesis is formulated along the lines of Caha's 2009 Universal Case Contiguity Hypothesis, (i):

(i) a. Universal (Case) Contiguity:

b. Non-accidental case syncretism targets contiguous regions in a sequence invariant across languages.

c. The Case sequence: nom– acc —gen—dat —ins —com (Caha 2009:49)

which were laid bare by the syncretism patterns also respect the scope/stacking properties of these four different types of negative markers. As such, the syncretism patterns and the scope/stacking properties point in the same direction: Pol — Foc — Deg — Q is the negation sequence.

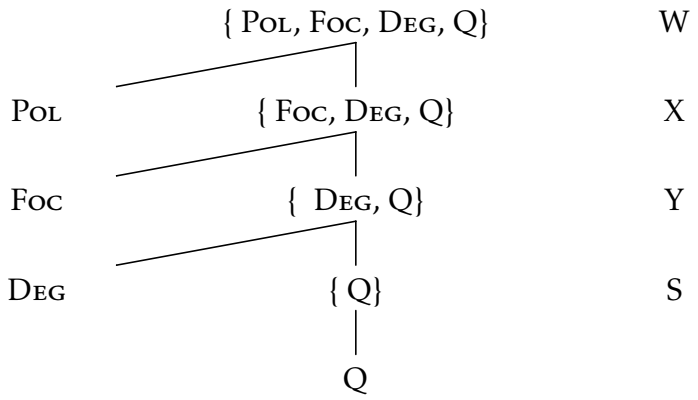
4.2.2 Decomposition

Given that the scope positions in the clausal spine, which we assume for the four types of negative markers, are not contiguous, the contiguity laid bare by the syncretisms must be structurally present at another point in syntax. Following nanosyntactic precedents in the case domain I argue that syncretism patterns point to structural contiguity of negative features inside the negative morpheme.

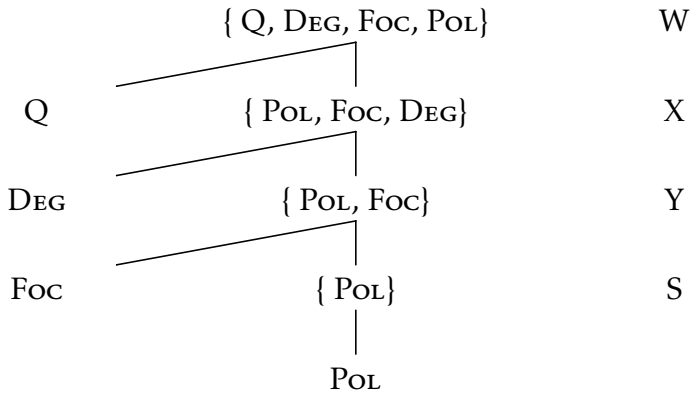
In order to decompose the negative morpheme I start from a sub-classification system which Caha also uses to decompose case and which he bases on Johnston (1996). I introduced this system in chapter 2 in order to show how case is decomposed. The system allows to translate the contiguity of negative markers in the sequence to a sub-classification, which eventually results in a hierarchical structure.

I first consider the four types of negative markers in the sequence part of one set. The next step is to decompose it into its subcomponents. The set we start from I label *W*. When the first type of the sequence is branched off from the set *W*, a new set *X* arises, and so on. Two sub-classifications can me made in this way, depending on whether we start splitting off POL, (3), from the set of all negative types or Q, (4).

(6)



(7)



The next step is a 'cumulative classification'(based on Caha (2009:21)). Each negative type is classified in terms of the amount of sets it belongs to. For the decomposition in (3) the cumulative classification is in (8). For (7) it is in (9).

(8) a. W = Pol
b. W, X = Foc
c. W, X, Y = Deg
d. W, X, Y, S = Q

(9) a. W = Q
b. W, X = Deg
c. W, X, Y = Foc
d. W, X, Y, S = Pol

If a negative marker belongs to different sets, it consists of different distinctive features. A negative marker that does not belong to certain sets, lacks these distinctive features. In (10) and (11) the letters representing the sets have been replaced by negative features: N1, N2, N3, …. Again I present the decomposition for both possible directions of the negative sequence.

(10) a. N1 = Pol
b. N1 + N2 = Foc
c. N1 + N2 + N3 = Deg
d. N1 + N2 + N3 + N4 = Q

(11) a. N1 = Q
b. N1 + N2 = Deg
c. N1 + N2 + N3 = Foc
d. N1 + N2 + N3 + N4 = Pol

However, even though a sub-classification like this one yields subatomic features whilst keeping the contiguity of the negative sequence (and thus avoiding non-contiguous syncretisms), it cannot capture all possible syncretism patterns. The sub-classification in (10) for instance cannot capture a syncretism of Q, Deg, Foc to the exclusion of Pol (a pattern present in Moroccan Arabic), since the feature N1, present in Q, Deg and Foc is also present in Pol. The sub-classification in (11) on the other hand cannot capture a syncretism of Pol, Foc and Deg to the exclusion of Q (as present in Hungarian), because the feature N1 present in Pol, Foc and Deg is also present in Q.

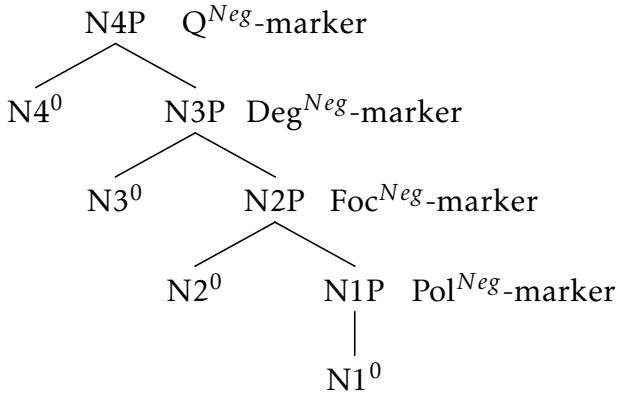
If we supplement this system with the Elsewhere Principle (Minimize Junk), then a syncretism between Pol, Foc and Deg to the exclusion of Q (as for the decomposition in (11)) is possible, since in this case Phon B, (12b), is possible in a proper subset of the situations of Phon A, (12a).

(12) a. {Pol, Foc, Deg, Q} /Phon A/
b. {Q} /Phon B/

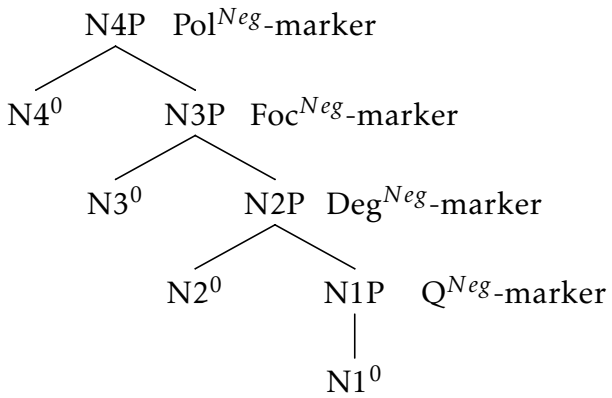
By means of cumulative sub-classification and the Elsewhere Principle, the Universal Negation Contiguity Hypothesis can be captured. Given that the surface form of syncretisms is related to the presence of contiguous subatomic features, the Universal Contiguity Hypothesis cannot be caused by a surface constraint. I claim it is a consequence of how syntax is organized. Given the binary nature of the decomposition I propose to translate the cumulative sub-classification into syntactic structure.

In line with nanosyntactic assumptions and the cartographic 'one feature one head' tenet, each of these N features in the decomposition in (10)–(11) is a syntactic head. When we now organize these heads in terms of binary branching trees, then we get a hierarchically organized tree in which the negative morpheme is split up in different negation layers, each instantiating a syntactic feature. The structure for the decomposition in (10) is in (13): Pol consists of only one feature in this decomposition and therefore comes lowest in this structure. The structure for the decomposition in (11) is in (14): in this decomposition Q consists of only one distinctive feature and thus comes lowest in this structure. The highest phrase node in these trees thus contains the features/heads of the lower nodes.

(13)



(14)



I adopt the structure in (14) as the correct structure. In section 4.2.5 I provide arguments for this choice. First I explain where this nanospine is inserted and then

how the nanospine can spell out the negative markers in Standard English and account for the syncretism between Foc-and Pol-negation in English.

4.2.3 Split NegP

In this section I propose that the negative nanospine in (2) is inserted in the specifier of a functional head Neg^0, creating what could be called a Split NegP (Poletto 2008, cf. section 4.2.5).

The negative spine is not base-generated as part of the main spine, i.e. it is not merged as the complement of a functional head, but rather it is inserted in the Spec of a NegP, as in (2). The result is a featurally complex NegP or Split NegP. The idea of a Split NegP goes back to Pollock (1989) who proposed for French that the head of NegP was filled by *ne* and that *pas* is in its specifier. Poletto (2008) pursues the idea of a Split NegP on the basis of negative doubling and tripling data in Italian. The general idea I develop in this dissertation is in some ways similar to her idea. However, our methodologies and the details of the analysis differ substantially. I discuss Poletto's proposal in section 4.2.5 and chapter 10.

Inserting complex constituents in the specifier of a functional projection is common practice for adverbial adjuncts (Cinque 1999) or subjects. I argue in chapter 8 that the head of NegP is endowed with an interpretable negative feature, thus accounting for the semantic negativity of the spine.[3]

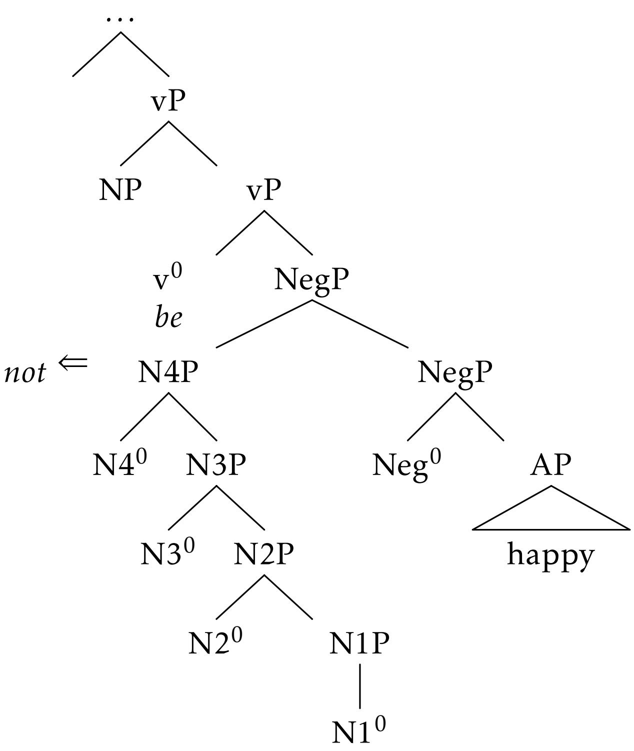
The assumption is that the head of NegP is phonologically empty. The negative force assigned to a negative marker like *un-* or *not* is thus essentially the same, which explains why they can give rise to double negation together. However, due to the different scopal properties of the markers in the nanospine, which are determined by the amount of negative features the nanospine consists of, semantic differences — like for instance the distinction between contradiction and contrariety — arise.

The NegP itself can be inserted in the clausal spine, on top of the main lexical predicate, for instance AP, NP or VP.[4] Therefore, I consider NegP first and foremost a predicate negator (Horn 1989) whose scope is determined by the features in the negative nanospine.

[3]The idea that either the head of NegP or the specifier of NegP contributes the semantic negative operator is omnipresent in the literature on negation (Haegeman 1995, Zanuttini 1997, Zeijlstra 2004, Penka 2011).

[4]I assume that NegP can also be merged within arguments or adjuncts, as long as it is merged on a predicate, not on functional structure like for instance D^0.

(15)



In this dissertation I concentrate on instances of NegP as a base-generated projection on the main adjectival predicate in copular constructions. I present arguments for the base-generated position in 6 and I briefly extend the proposal to verbal predicates in 6 and 10.

4.2.4 Spell Out

In this section I show how the spell out of negative markers in Standard English works. I first show how the productive markers are spelled out, then how the unproductive negative markers (*iN-*, *dis-*) can be spelled out.

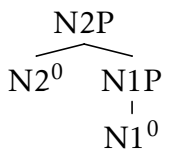
4.2.4.1 Productive negative markers

The post-syntactic lexicon of English consists of at least the following Lexical Items (LI) for negation, illustrated in (16)-(18).[5] Each lexical item consists of phonological material /phonology/, syntactic structure and conceptual information (which I represent by the label of group of negative markers).

(16) LI 1
{/ʌn/, N1P , NEG }
|
$N1^0$

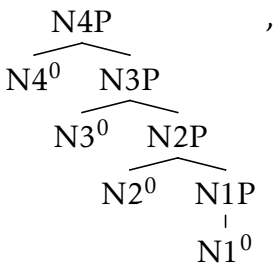
[5]I leave out the use of *n't* here and I come back to this in 7.2.5

(17) LI 2

{/nɒn/, 

, NEG }

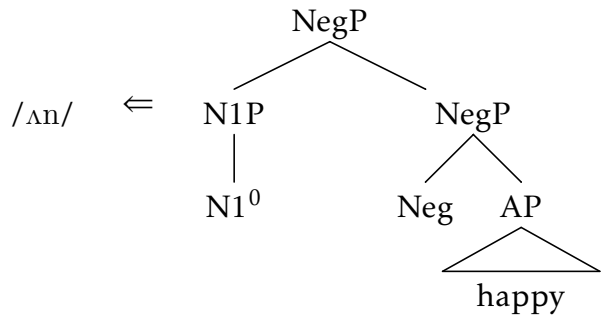
(18) LI 3

{/nɒt/, 

, NEG}

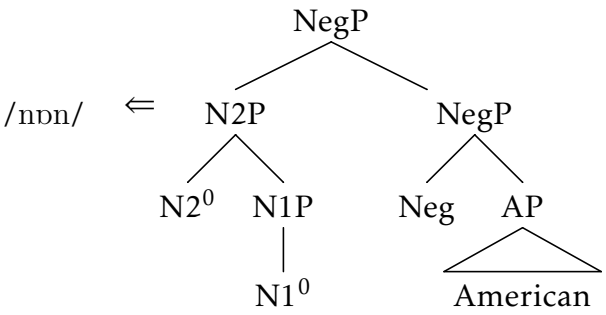
When N1P is merged, the lexicon is checked. There is an LI, (16) in the lexicon which has a lexical tree that corresponds to the structure in syntax, (19). N1P can be spelled out. This negative spine can be inserted in the specifier of a NegP for the derivation of a word like *unhappy*.[6]

(19)



The negative spine could thus stop here. However, it could also continue for instance when a negative adjective like *non-American* needs to be derived. Then another feature, N2, will be merged on top of N1P, as in (19).The lexicon is checked again. There is a match between the structure in syntax and the LI (17) in the lexicon. The spellout of N2P overrides the spellout of N1P.

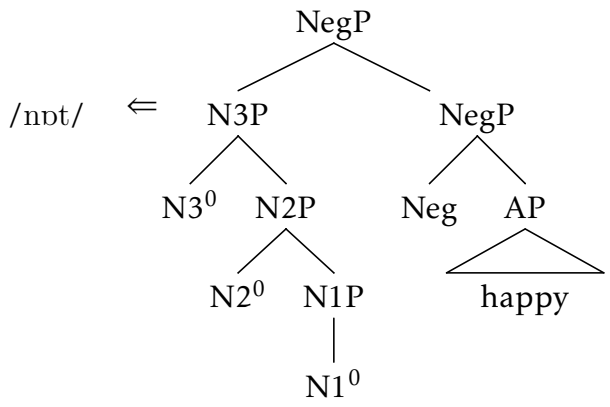
(20)



[6]I present the full derivation for a copular clause containing *unhappy* in section 7.2.2.

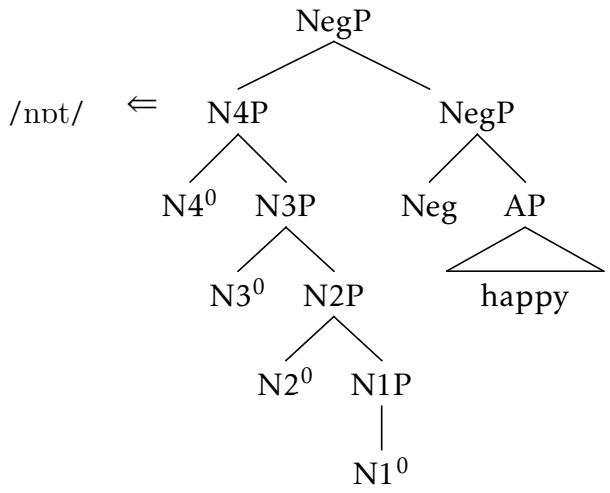
Again the derivation could stop here, but it could also continue to derive a low scope contrastive negation like *not happy (but sad)*. In that case N3 is merged on N2P, as in (21). The lexicon is checked again, but no perfect match is available in the lexicon. However, there is LI3, (18), which contains the spine that is merged in syntax. Due to the Superset Principle, LI3 can be inserted for the syntactic structure in (21). The reason that the lexicon does not have a perfect match for the spine in (21) is a consequence of syncretism: *not* functions as a Foc- and Pol^{Neg}-marker in English. The spellout of N3P overrides the spellout of N2P.

(21)



The derivation could stop here, but for a copular clause like *She is not happy*, N4 needs to be merged in in syntax, as in (22). The lexicon is checked and LI3, (18), matches the structure in syntax. The spellout of N4P overrides the spellout of N3P. However, due to the fact that *not* is syncretic for Foc- and Pol-negation this does not result in a different marker at PF.

(22)



In chapter 8 I also explain how the spellout of *n't* can be derived. I now turn to unproductive affixes like *iN-* and *dis-*.

4.2.4.2 Unproductive negative markers

In this section I discuss how unproductive markers like *iN-* and *dis-*, which also belong to the group of Q^{Neg}-markers can be spelled out.

Merge of the feature N1 in English normally leads to insertion of *un-* in conformity with the LI in (16). However, this is not always the correct spellout. Sometimes adjectival predicates combine with an unproductive Q^{Neg}-marker. We observed this also for other languages, like for instance in Czech and Hungarian. I argue in this section that the spellout of these unproductive markers can be made possible by pointers, a tool used in nanosyntax to spell out idioms (Starke 2011a), irregular forms or syncretisms in multidimensional paradigms (Caha and Pantcheva 2012).[7] I first introduce how idioms or irregular forms can be spelled out in nanosyntax and then I apply this to the negative markers *iN-* and *dis-* in English.

Irregular verb forms can be spelled out by making use of pointers (Starke 2011a). A pointer is a reference in the lexical tree of a LI to the index of another LI. I illustrate this for the irregular past tense of the verb *bring*.[8] The verb is listed in the lexicon in the way illustrated by (23). Like all LIs, this LI also has an index. I arbitrarily say that the index of the item is 712.

(23) $<_{712}$ /brɪŋ/, [V*], BRING>

When syntax merges V*, the LI in (23) can be inserted. After spellout of V*, the index 712 — which points to the LI in (23), remains present throughout the derivation, as illustrated in (24). As a consequence, when structure is built on top of V*, the structure can always be directed to this lexical item.

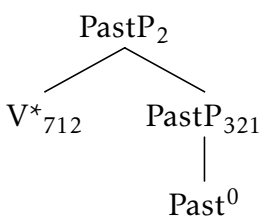
(24) V^*_{712} ⇒ /brɪŋ/

The lexicon contains the following LI for past tense in English, (25). It also contains a lexical item for the irregular past tense of *bring*, namely *brought*, (26).

(25) $<_{321}$ /d/, PastP / $Past^0$ PAST>

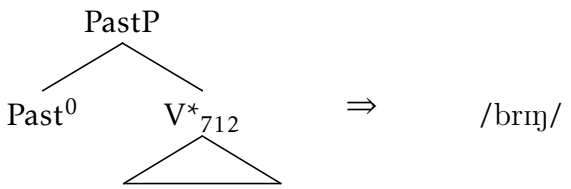
[7] I kindly want to thank Michal Starke for discussing the use of pointers with me. However, all errors are mine.

[8] I want to illustrate how irregular forms can be derived in the system. It is not my intention to present the complete functional structure needed to derive past tense in English.

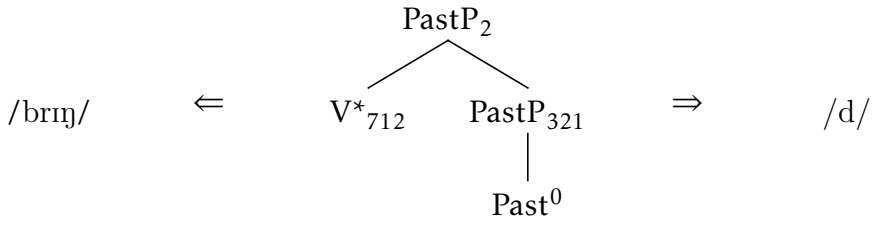
(26) <$_{321}$ /brɔːt/, 

, PAST>

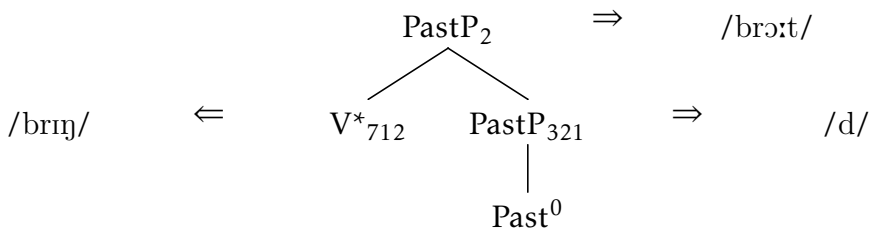
When syntax merges the feature [Past] in the structure, as in (27), then the lexicon is checked. However, there is no LI which can spell out this structure.

(27) 

As a next step, V* is moved to SpecPastP in order to be able to spellout, (29). The lexicon is checked and a matching item (23) is found. The structure is spelled out as *bring-ed*.

(28) 

At the next higher node, PastP^2, the lexicon is checked again. In case of regular verbs there is no new match found and the spellout is *V*+ed*. However, for *bring* the lexicon contains another LI which refers or points to the LI of *bring* (712) and the LI of *-ed* (312), illustrated in (26). The spellout of this LI is *brought*.

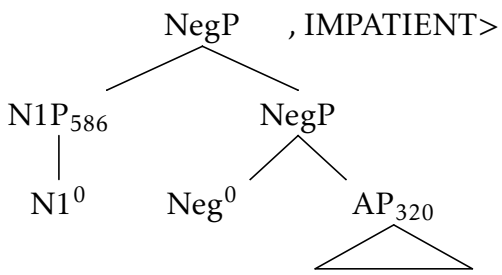
(29) 

In the same vein I propose that the spell out of *iN-* (for for instance *impatient*) or *dis-* (for for instance *dishonest*) in English is the consequence of a lexical item which points to the structure for a regular Q^{Neg}-marker on the one hand and to a listed adjective on the other hand. The implication here is that these unproductive forms are stored as idioms or irregular forms. I illustrate this with two examples. First I present the derivation and LIs for *impatient* and then for *dishonest*.

To derive the spellout of *impatient*, the following LIs are used: a LI for Q-negation

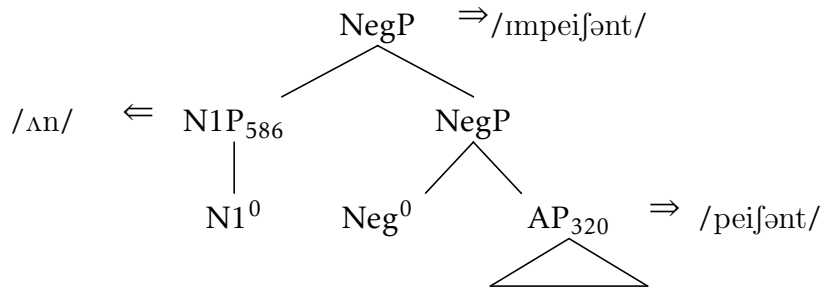
with index 586, (30a), an LI with index 320 for the adjective *patient*, (30b), and an LI with index 590 for the adjective *impatient*, (30c). The LI of *impatient* does not only contain the structure of AP with a pointer to the LI for a regular Q^{Neg}-marker, but it also contains a pointer to a specific AP, namely to the AP *patient*.

(30) a. <$_{586}$, /ʌn/, [N1P[N1]], NEG >
b. <$_{320}$, /peiʃənt, [AP], PATIENT>
c. <$_{590}$, /impeiʃənt-/,



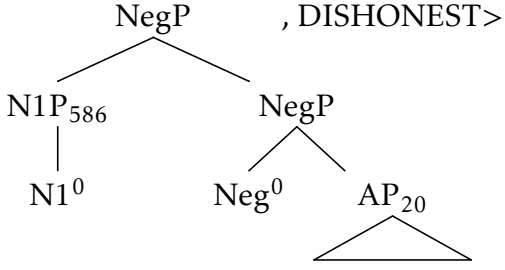
When an AP is merged and gets spelled out as *patient*, the pointer of the inserted LI remains visible throughout the derivation. After NegP has been been merged with in its specifier the features for the Q^{Neg}-marker *un-*, the lexicon is checked again at the next phrasal node, i.e. NegP. The lexicon contains a LI which corresponds to this complex structure: the LI for *impatient*. The structure is spelled out and the previous spellouts are overridden due to Cyclic Override.

(31)



The same happens with an adjective like *dishonest*. The LIs are in (32): there is the LI for the Q^{Neg}-marker *un-*, (32a), an LI for *honest*, (32b), and an LI for *dishonest*, (32c).

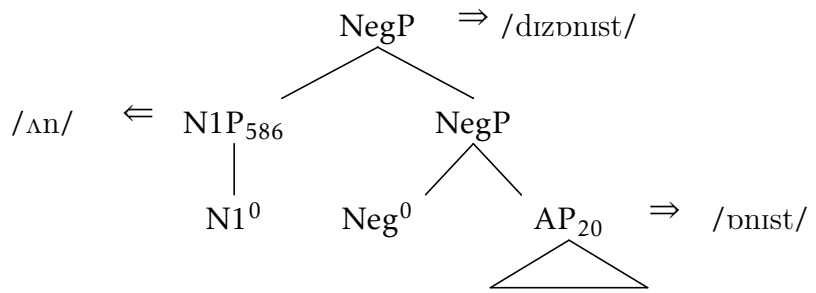
(32) a. <$_{586}$, /ʌn/, [N1P[N1]], Q >
b. <$_{20}$, /ɒnɪst/, [AP], HONEST>
c. <$_{87}$, /dɪzɒnɪst/,



When an AP is merged and gets spelled out as *honest*, then the pointer of the inserted

LI, 20 in this case, remains visible throughout the derivation. After NegP has been been merged with the features for the Q^{Neg}-marker *un-* in its specifier, the lexicon is checked again at NegP. The lexicon contains a LI which corresponds to this complex structure: the LI for *dishonest*. The LI is inserted and the previous spellout *un-honest* is overridden due to Cyclic Override.

(33)

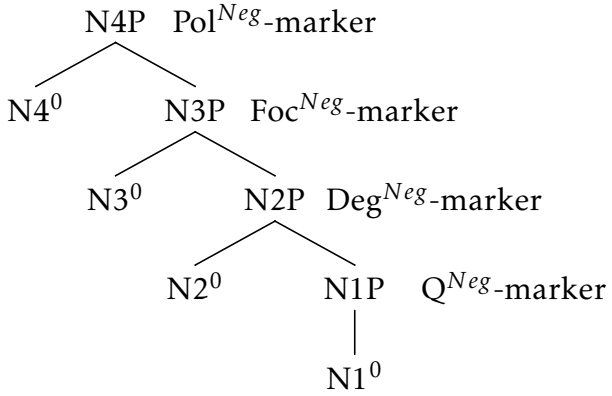


Under the present proposal the unproductive Q^{Neg}-markers are part of a series of listed negative adjectives. Their LIs contain a pointer, i.e. a reference to the index of a certain adjective, and the usual structure for Q^{Neg}-markers. The unproductively Q-negated adjectives are thus stored as one unit in the lexicon.[9]

4.2.5 Containment

In this section I offer support for the decomposition in (7) and the negative spine in (14), repeated here as (34).

(34)



The main hypothesis underlying the spine is that Pol^{Neg}-markers do not only consist of the feature N4, but they also consist of the features N1, N2 and N3. The features for Q-, Deg- and Foc^{Neg}-marker are thus contained in a Pol^{Neg}-marker.[10] Foc^{Neg}-

[9]The suppletive forms of the copular verb 'be' in MSA *laysa* or *není* in Czech and the existential verb *nincs* in Hungarian could also be derived in this way. I postpone this to further research.

[10]As we go along, it will become clear that in some languages, like for instance *le bon usage French*, 9, the lexical tree for a Pol^{Neg}-marker is only a subpart of the negative spine. In this case the Pol^{Neg}-marker is featurally impoverished and shows clitic-like behavior. I postpone this discussion to 7 and 9.

marker consist of the features N3, N2 and N1 and Deg^{Neg}-markers consist of N2 and N1. Important to mention here is that a Pol^{Neg}-marker cannot be equated with the feature N4. It is the spellout of the cumulation of N1, N2, N3 and N4.

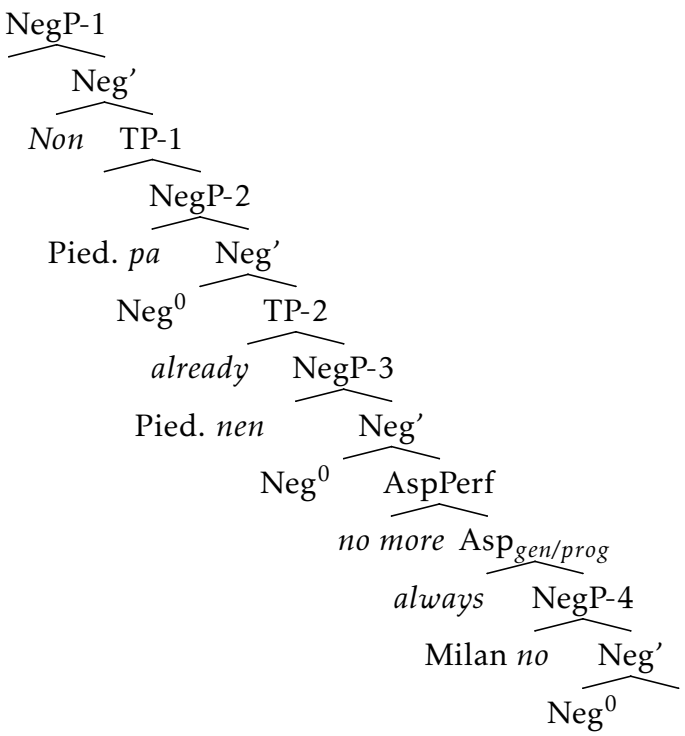
The first argument for the structure that I adopt comes from the size of the lexical items from a diachronic point of view. The English markers *un-*, *a- and -iN* are derived from Proto-Indo-European (PIE) **n-*, which is a variant of **ne-*(Harper 2013). *Non-* on the other hand consists of that same **ne* and the Latin word *oinum*, meaning 'one' (Horn 1989:453). *Non-* is hence morphologically and featurally bigger than *un-*, *iN-*, *a-* . Also *not* (Harper 2013) is morphologically bigger than *un-*, *iN-*, *a-*. It is the unstressed variant of *naught*, which consists of PIE **ne* and Old English (OE) *wiht* which means 'person, creature, thing'(Horn 1989:455, Harper 2013). These diachronic data suggest that Q^{Neg}-markers are contained in Pol-, Foc- and Deg^{Neg}-markers. Unfortunately, these diachronic data do not say anything about the relationship between *non-* and *not*, i.e. it is not clear whether a Deg^{Neg}-marker is contained in a Foc- and/or Pol^{Neg}-marker.

A second argument for the spine in (14) comes from grammaticalisation. This process provides support for the negative spine I propose. Sentential negative markers, which I call Pol^{Neg}-markers, often find their origin in minimizers, like French *pas* or regular indefinites, like Old English *wiht* (as described above). An example of a negative marker which is derived from a minimizer comes from French *pas*. Originally *pas* is derived from the noun, *un pas* 'a step' and is thus a minimizer, i.e. it denotes a small quantity. Minimizers ideally occur in the scope of negation as a way to emphasize the preverbal negative marker. The minimizer *pas* evolved into being used as an emphatic adverb in the scope of the negative marker *ne* until it became a negative marker itself. In *le bon usage* French *pas* had already strengthened into a Foc^{Neg}-marker, but could not yet express sentential negation without the help of *ne* (Grevisse and Goosse [1936] 1993). In spoken French nowadays *pas* can be used on its own as a sentential negative marker (Pollock 1989, Rowlett 1998a) and it has thus acquired the status of a Pol^{Neg}-marker (cf. 9 for discussion of bipartite negation in French). From a diachronic point of view thus quantificational features and focus features are an inherent part of the grammaticalisation of what I call Pol^{Neg}-markers. Consequently, from the perspective of grammaticalisation the spine with Pol^{Neg}-markers at the top and Q^{Neg}-markers at the bottom reflects the evolution which indefinites or nouns undergo to give rise to sentential negation.

Third, this grammaticalisation process is also reflected in Poletto (2008)'s work. Her proposal for a Split NegP on verbal predicates supports the containment relation as proposed in (13). Her proposal — though methodologically very different — points in the same direction as the decomposition proposed in this chapter. In what follows I discuss her proposal in greater detail. Poletto's work builds on Zanuttini's cartographic work of negation. Zanuttini looked at the position of sentential negative

markers in combination with verbal predicates in 150 different dialects of Romance. Based on the position of these negative markers with respect to functional adverbs in the clausal spine (Cinque 1999), she concluded that sentential negation can appear in four different positions which she labelled NegP1, NegP2, NegP3 and NegP4. The different positions are illustrated in the tree structure in (35). Neg1P is the position of negative markers which negate the clause on their own, as for instance Standard Italian *non*.[11] NegP2 is the position for presuppositional negative markers, like Piedmontese *pa*. NegP3 hosts negative markers like Piedmontese *nen*, which precede an adverb like *sempre*. Negative markers like Milanese *no* which occur in a position lower than *sempar* 'always' and higher than *tut cos* 'all' are hosted by NegP4.

(35)



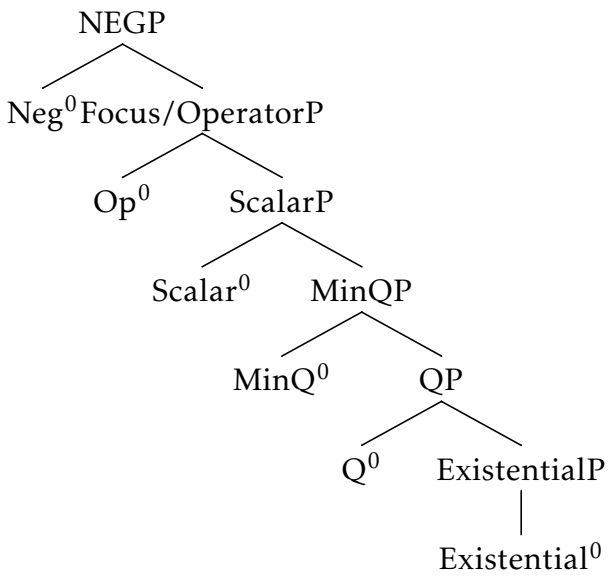
Poletto's proposal starts from these four positions detected by Zanuttini. She claims that 'each negative marker singled out by Zanuttini corresponds to an "etymological type" in the sense that all elements found in a given position have developed from homogeneous classes (Poletto 2008:63)'. She labels these four types or classes of negative markers according to what is to her the most striking property either from a diachronic perspective, a semantic or pragmatic perspective. The negative markers in Zanuttini's NegP1 she calls scalar negative markers. The negative markers in NegP2 she calls Minimizers, related to the historical origin of the negative marker. The negative markers in NegP3 she refers to as quantifier phrase, because these negative markers are histor-

[11] Zanuttini distinguishes between preverbal negative markers which negate the clause on their own and preverbal negative markers which do not negate the clause on their own. The former are in Neg1P, the latter are merged in Neg2P and head-move to be adjoined to a functional head in between Neg1P and TP.

ically derived from quantifiers meaning 'nothing'. The negative markers in NegP4 she refers to as focus markers, because they are always stressed and because they take the same shape as the polarity emphasizer 'no'.

In order to account for negative doubling and tripling in Italian dialects, Poletto groups all four negative markers in one Split NegP,(36).[12]

(36) (Poletto 2008:64)



Poletto base-generates this Split NegP in a specifier of vP.[13] Like Zanuttini she has four projections in the clausal spine which are targeted by layers in the Split NegP. The projections in the clausal spine have the same name as the projections in the Split NegP.

Interesting for the present account is that the different types of negation that Poletto distinguished on the basis of etymological research on positions for sentential negation in combination with verbal predicates are quite similar to the features I distinguished on the basis of cross-linguistic research on syncretism patterns. Poletto's ScalarP, which hosts sentential negative markers like Italian *non* is compatible with

[12]Doubling or tripling involves the co-occurrence of two, (ia) or three, (ib) negative markers which together express one semantic negation.

(i) a. Nol me piaze NO (Veneto)
Not-it me likes no
'I do not like it.'

b. No la go miga magnada NO!
Not it have not eaten not
'I did not eat it.'

Doubling should be distinguished from negative concord, which involves the co-occurrence of two (or more) negative indefinites or one or more negative indefinites and a negative marker.

[13]Poletto (2008) is not so clear on the precise location of this Split NegP in her paper. However, Breitbarth (to appear) reports that Poletto (p.c) confirmed it is on vP. In Garzonio and Poletto (2013) on the other hand it is suggested that the base-position may even be within vP.

the Pol^{Neg}-markers spelled out by N4P in the nanospine.[14] Poletto's MinQP hosts minimizers,like French *pas* and Italian *mica*, and is compatible with N3P in the nanospine, which spells out Foc^{Neg}-markers. At the bottom of Poletto's Split NegP are QPs, which host negative markers which developed from negative quantifiers, like Piedmontese *nen* (Poletto 2008:62, Zanuttini 1997) which originally meant 'nothing' but now means 'not'.

Summarizing, Poletto has markers like Italian *non* at the top of her Split NegP (in ScalarP) and markers which originally meant *nothing* at the bottom of her Split NegP (in QP). The proposal in this chapter to have Q^{Neg}-markers contained in Pol^{Neg}-markers has thus been independently confirmed by research which is methodologically different and which focused on sentential negative markers with verbal predicates.

A fourth argument comes from French. I argue that the example in (37a), which is a case of negation compounding, i.e. an instance of negative doubling, has the containment of Deg^{Neg}-markers in Foc^{Neg}-marker on its sleeve. The two negative markers *non pas* yield one semantic negation together. The construction is considered emphatic.

(37) a. Il s'arrête, non pas inquiet, mais curieux.
he himself-stopped, neg neg neg-calm, but curious
'He stopped, not worried, but curious.'
(Bernanos, Sous le soleil de Satan, Pl.,p.165) (Grevisse and Goosse [1936] 1993:1446)

Whereas the two negative markers in (37a) express only one negation, the negative markers in the example in (38a) and (38b) express double negation. [15]

(38) a. Il s'arrête, pas non inquiet.
he himself-stopped, neg neg neg-calm
'He stopped, not not worried

b. Il a été pas non in -quiet, mais totalement en panique.
he has been neg neg neg -calm, but completely in panic
'He hasn't been not restless, but completely in panic.'

Interestingly, in (38b) the linear order of the negative morphemes is as in the negative spine: the Foc^{Neg}-marker linearly precedes the Deg^{Neg}-marker. However, in the case of (37a), the linear order is reversed and the construction expresses only one semantic

[14] Poletto's label is based on Rooryck (2010) who proposes for French *ne* that it is a contrariety marker. However, scalarity is not only related to contrariety, but also to contradictoriness. Moreover, Rooryck's discussion concerns French *ne* whose properties are very different from Italian *non*. *Non* can negate the clause on its own, whereas *ne* cannot do this.

[15] A similar contrast is described for Flemish by Haegeman and Lohndal (2010).

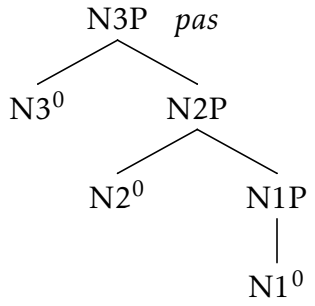
negation. Therefore, I propose that the case in (37a) is derived on the basis of one negative spine, whereas two spines are involved in (38a)-(38b). The reversed order of the compounding case in (37a) supports the order in the spine we have. If the order were not reversed, the Deg^{Neg}-marker *non* would be overridden by *pas*. However, due to a mechanism, called Peeling, which I described in 2 (Caha 2009), the negative layers from one and the same negative spine can be peeled off, yielding the emphatic negative doubling structure in (37a).

In order to give rise to the negative emphatic construction in (37a), I assume that French has the following LIs for *iN*, *non*, (39b), and *pas*, (39c):

(39) a. LI1 < /iN-/ [N1] ¬>
b. LI2 < /non/ [N2 [N1]], ¬>
c. LI4 < /pas/ [N4[N3[N2[N1]]]], ¬>

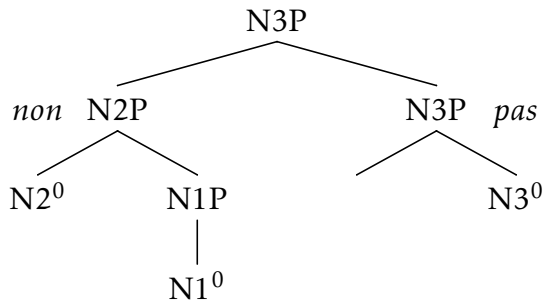
Since *pas* in (37a) is a clear instance of Foc-negation, the structure for a Foc^{Neg}-marker, (6), is merged feature per feature and spelled out in a cyclic way as described in 2 and 4.2.4 for English. The previous spellouts are overridden.

(40)



However, once the structure is merged, the lower layers, N1P and N2P can be peeled off and moved to a higher position, presumably within the nanospine. The structure we get is in (41). The Deg^{Neg}-marker has become a degree modifier of the Foc^{Neg}-marker in this construction, giving rise to the emphatic doubling construction in (37a).

(41)



It remains unclear to me at this point how the overridden layers, N1P and N2P, can be 'reactivated' when they are moved in syntax. Moreover, it is also not clear to me at this point whether the fact that *pas* has lost its 'anchor' is problematic for further computation. I do not wish to pursue these issue here. I conclude that the emphatic

doubling construction provides support for the hypothesis that Deg^{Neg}-markers are contained within Foc^{Neg}-marker.

Based on the support presented in this section, I assume that the structure in (14) — which I proposed is underlyingly present in a negative marker — captures the order of the feature composition of negation well: Foc, Deg, and Q^{Neg}-markers are contained in Pol^{Neg}-markers (and not the other way around).

4.3 Conclusion

In this chapter I showed how contiguous syncretism patterns between negative markers point at structure within what is normally considered one unit, i.e. the negative marker. I decomposed this negative morpheme into four subatomic features, N1, N2, N3 and N4, which I then organized into hierarchical structure. I refer to this structure as the negative nanospine. I provided arguments for why the layers N1, N2, N3 are contained within N4 and not the other way around. I claimed that this negative nanospine is inserted as a complex constituent in the specifier of NegP. I showed how spellout of the negative markers in English, both productive and unproductive markers, takes place.

Part III

External syntax of negation

5

NegP as a predicate negator

5.1 Introduction

In the previous chapter I proposed that negation is encoded in an articulated constituent, which I referred to as Split NegP. The head of this NegP is semantically interpretable for negation, but phonologically empty. The complex nanospine in the specifier of NegP provides features which instantiate the heads N1, N2, N3 and N4. Their phrases spell out Q^{Neg}-markers (N1P), Deg^{Neg}-markers (N1P + N2P), Foc^{Neg}-markers (N1P+N2P+N3P) and Pol^{Neg}-markers (N1P+N2P+N3P+N4P).[1] I argued that these negative markers are responsible for the scope of the negation rather than the semantic expression of negation itself. They are thus scope markers for negation. In this chapter I examine the position of this complex constituent in relation to the clausal spine. I argue that the Split NegP is base-generated on a lexical predicate and is thus a predicate negator.

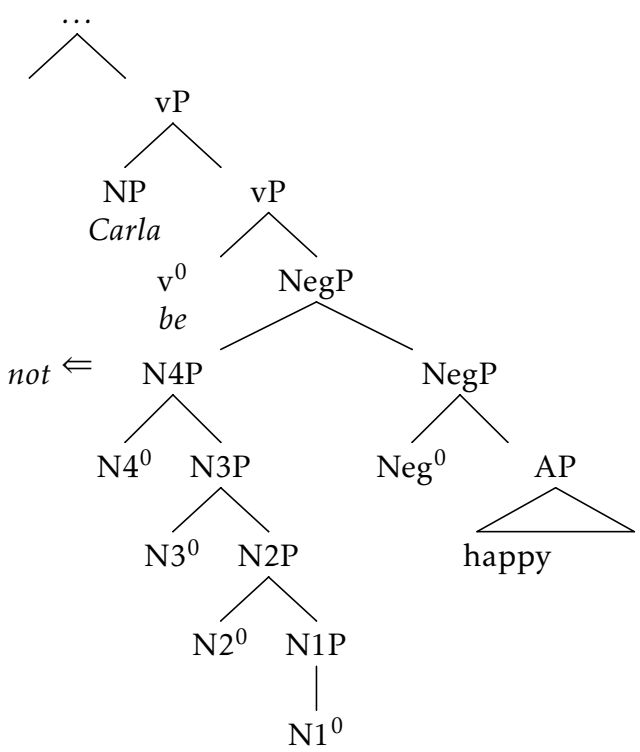
The claim that negation is a predicate negator rather than a propositional negator is in line with Horn (1989)'s claim. Horn argued for predicate negation and a return to Aristotelian term logic on the basis of the variety of negative markers natural language displays in different positions. The syncretism patterns discussed and analyzed in 3–4 provide even more support for this line of thought. The one-dimensional propositional operator of Fregean propositional semantics cannot do justice to the scopal richness and featural complexity of natural language negation. Moreover, Dahl (1979) (and Horn (1989:446)) showed convincingly in typological work that there is hardly

[1] In chapter 7 I become more explicit on the precise feature composition of N1, N2, N3 and N4.

any evidence in natural language for an external propositional negator as found in formal semantics.

I illustrate the proposal in (1) for a copular sentence like *Carla is not happy* and in (2) for a sentence with a verbal predicate, *Angela does not agree*.[2] I am abstracting away at this point from the rest of the clause and hence also from Neg-related projections in the clausal spine, which I discuss in the next chapter. I only depict the low position for NegP with a fully-fledged nanospine.[3] A nanospine with four layers like the one in (1) and (2) expresses Pol-negation and will - due to its feature composition - take scope in more than one Neg-related projection in the clausal spine. However, I postpone discussion of how this works to 7 and I focus for now on the evidence for this low predicate NegP.

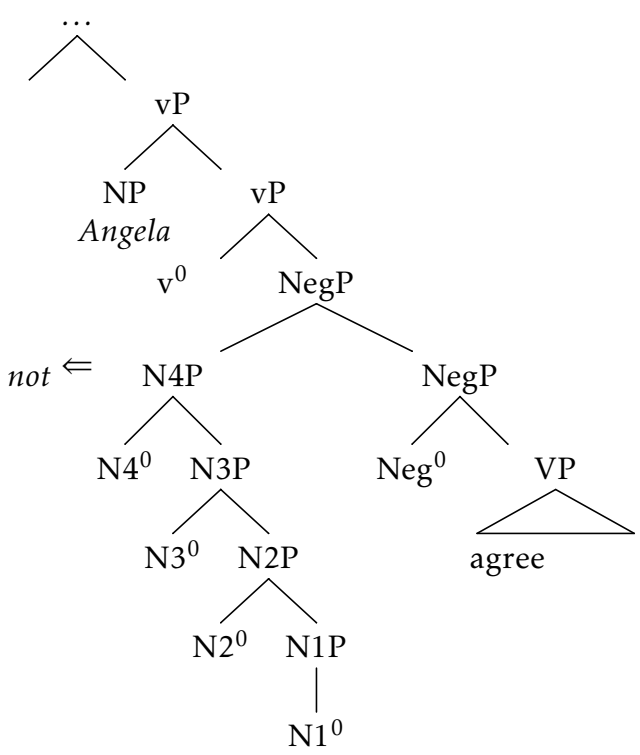
(1)



[2]I am ignoring for now the fact that copular clauses are often represented as consisting of specific structure, namely a small clause node, a predicate phrase or a relator phrase which mediates the close relationship between the predicate and the subject. I refer the reader to Stowell (1981), Chomsky (1981), Williams (1981), Starke (1995), Moro (1997), Hoekstra and Mulder (1990), Bowers (1993), Heycock (1994), Bennis et al. (1998), Den Dikken (2006) and many others for various approaches to predication and small clauses. Nothing fundamentally would change if a small clause node were integrated in the structure, below vP.

[3]I hypothesize here that what I propose for copular clauses can be carried over to verbal predicates. I provide support for this hypothesis in chapter 10.

(2)



In the following sections I provide evidence for the low position of NegP in the clausal structure. One piece of support comes from the lowest layer in the negative spine. The other piece of evidence comes from reconstruction effects.

5.2 Evidence for a predicate NegP

5.2.1 The location of Q-negation

I propose in this section that the base-generated position of NegP with the negative spine in its specifier is a position immediately dominating the lexical predicate.[4] The crucial argument for this claim comes from the nature of the lowest layer in the negative spine: the Q-layer (as I refer to the layer consisting of N1P) can only be base-generated on top of a lexical predicate, since it can never take scope beyond .

Q^{Neg}-markers like English adjectival *un-* or French adjectival *iN-* are stucturally closest to the predicate.[5] As illustrated by the example in (3), a modifier cannot inter-

[4]Other approaches which make use of a low NegP are Aelbrecht (2007) who proposes a low NegP for the negative concord construction *niemand nie* 'nobody' in Dutch, Haegeman and Lohndal (2010) who also argues for a DP-internal NegP for the composition of the Dutch n-word *niemand*, Temmerman (2012) who argues for a NegP on English negative indefinites which have to be licensed by a higher PolP and Troseth (2009) who proposes that there must be a DP-internal negative feature which allows for DP-internal negative inversion.

[5]For complex adjectives like *incredible*, *inarguable*, *impossible* … NegP is basegenerated on a derived adjective. Consequently, the Q-layer in SpecNegP is not closest to the adjectival stem in this case. I propose in chapter 8 that these derived adjectives are not gradable and that therefore QP is not projected

vene between the negative marker and the adjectival stem.

(3) *un very happy

In addition, prefixal Q^{Neg}-markers never take scope in a position beyond the lexical predicate. This lack of wide scope for Q^{Neg}-markers is illustrated by the fact that positive tags, indicating negative sentences, are ungrammatical with Q^{Neg}-markers, as in (4).

(4) a. The proposal is not realistic, is it/ *isn't it?
b. The proposal is unrealistic, *is it/ isn't it?

Even in interaction with operators which normally induce wide scope of negation, Q^{Neg}-markers do not take wide scope. Consider for instance the interaction between *not* and modals of possibility in English. The marker *not* can scope above possibility modals like *can*, but need not scope above it, as illustrated by the different readings of (5).

(5) A priest could not marry.
= A priest is not allowed to marry/ It is not possible for a priest to marry. (Catholic reading)
= A priest is allowed not to marry. (Episcopalian reading)
(Horn 1989:259)

The English adjectival Q^{Neg}-marker *un-* can never scope over a possibility root modal, as illustrated in (6a). The same goes for the verbal Q^{Neg}-marker *dis-*, (6b).

(6) a. A priest could be irreligious.
= It is possible for a priest to be irreligious.
≠ It is not possible for a priest to be religious.
≠ It is possible for a priest to not be religous.

b. A priest could dislike God.
= He is allowed to dislike God/ It is possible to dislike God.
≠ A priest is not allowed to like God/ It is not possible to like God.

On the one hand, the data in (3) show that nothing can intervene between the adjective and the Q^{Neg}-marker and that the Q^{Neg}-marker cannot take wide scope. This is illustrated by the lack of positive question tags, (4), and the absence of wide scope over root possibility modals, (6). On the other hand, we saw that these Q^{Neg}-markers give rise to double negation, as in (7a), and can license negative polarity items (NPIs),

in the clausal spine, leading to absence of a contrary interpretation.

as in (7b). Moreover, we saw that there are meaningful syncretisms between Q^{Neg}-markers and other negative markers. If we accept that Q^{Neg}-markers, the lowest point in the spine, are base-generated close to the predicate, then it follows that Deg^{Neg}-, Foc^{Neg}- and Pol^{Neg}-markers also need to be base-generated in a position close to the predicate.

(7) a. He isn't unhappy.
b. Unaware of any dangers he went on vacation.(Zeijlstra 2004:46)

We thus need a position for the Q^{Neg}-marker which is structurally close to the adjectival or verbal predicate on the one hand and allows the other negative scope markers to be base-generated with it. [6] This position is the specifier of a NegP on the main lexical predicate.

If we did not base-generate Deg^{Neg}-, Foc^{Neg}- and Pol^{Neg}-markers in the same position an explanation for the meaningful syncretism patterns and the data in (7a)–(7b) would be lost. Therefore, regardless of whether the Pol^{Neg}-marker is syncretic with Q^{Neg}-, Deg^{Neg}- and Foc^{Neg}- (as the fully syncretic Czech *ne*) or not (as is in non-syncretic Greek), I claim that the full negative spine is always base-generated in the Specifier of a NegP on the main lexical predicate, as in the trees in (1)–(2). Split NegP is thus essentially a predicate negator. This assumption is in line with Horn (1989:chapter 7).

5.2.2 Reconstruction

In this section I discuss two sets of data in which the sentential negative marker *not* or *n't* can get a low scope interpretation. I argue that these data show that negation can reconstruct at LF. If reconstruction is possible, this entails that movement must have taken place from a low position in syntax. Consequently, the data point to the fact that sentential negation moves in syntax from a low position on the predicate to its derived position from where it takes sentential scope.

5.2.2.1 Contraries in contradictory clothing

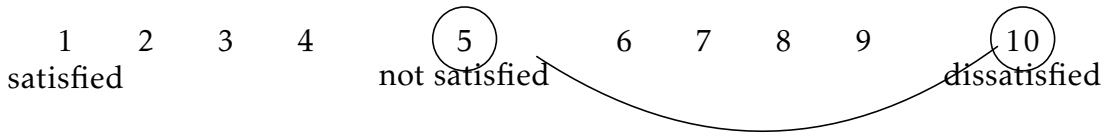
In section 3.2.4 I discussed the distinction between contradiction and contrariness and I concluded – in line with Horn (1989) – that *not* and *non-* in English are contradictory markers, whereas *un-* (and its unproductive variants) are contrary markers. However, sometimes sentential contradictory markers can give rise to contrary interpretations, as in the example in (8). The expression of the boss in the example is not interpreted as the mere complement of being satisfied, i.e. *not satisfied*, but rather as its antonym:

[6] The fact that Foc- and Pol^{Neg}-markers rarely occur so close to the predicate and that they give rise to intervention effects is due to their feature composition which allows them to take wide scope. I explain this in chapters 6, 7 and 8.

being dissatisfied: the contradictory negative marker *not* thus gets a contrary interpretation.

(8) Context: Michal, the boss of a software developing company, calls George for a yearly evaluation. Michal starts the conversation with:
"I am not satisfied with your work."

When we visualize the scalar component of the predicate *satisfied*, as in (9)–(10), then "statisfied" itself covers 1–4. A contradictory negation normally covers the entire range going from 5 until 10, as in (9), i.e. it denotes the complement of the situations denoted by the predicate. However, for the sentence in (8) the negated predicate is rather interpreted as being in the extreme negative end of the scale, i.e. as denoting a subset of the complement of the situations denoted by the predicate, (10). Such a reading is usually expressed by means of a Q^{Neg}-marker, which – as argued before – is base-generated close to the adjectival predicate.

(9)


(10)


An example along the same lines is discussed in Chomsky (1970:104) and cited in Horn (1989:332).

(11) John [(doesn't like) mushrooms].

Chomsky (1970:71) says the following about this example:

> In [(11)] we can take the negative element to be associated with the verb, so that it means *John dislikes mushrooms*, or with the verb phrase, in which case it means: *it is not so that John likes mushrooms*. In other words, either the parentheses or the brackets express a possible interpretation'.

Again as in (8) the negative marker *n't* in (11) is in its regular sentential position attached to the tensed auxiliary, but can receive the same interpretation as the Q^{Neg}-marker *dis-*, which – as argued before – is merged on the lexical predicate.[7]

Expressions like (12a) and (12b) are also usually interpreted as if not the contradictory marker were used, but the contrary marker.

(12) a. I don't agree ⇒ I disagree

[7] See chapter 10 for a preview on how the negative spine for adjectival predicates could be extended to verbal predicates.

b. Ì don't like Kenneth ⇒ I dislike Kenneth (Leech 1983:101-102

Horn (1989:330-337) calls all of the data discussed here contraries in contradictory clothing. As discussed above the contrary reading is 'stronger' than the contradicotry reading. Horn attributes the emergence of the stronger contrary reading in the context of gradable predicates to pragmatic inference on the part of the hearer and to a psychological preference for binary opposition (in line with Sapir (1944)). The speaker wants to avoid using the stronger (and sometimes more hurtful) contrary negative marker by using the weaker contradictory negative marker as a hedging or mitigating device' (Leech 1983:101-102).

However, I would like to propose that what Horn and others have considered a pragmatic effect can be regarded as a consequence of syntactic structure. Namely, if we accept the strong claim defended here that all negation – including those negative markers which eventually end up taking sentential scope, like the Pol^{Neg}-marker *not* or *n't* – is base-generated low on a lexical predicate, then the contrary readings that may arise are a consequence of reconstructing the negative spine or one of its subparts in its base-position, Spec NegP, at LF.

The analysis presented here does not exclude that pragmatics is involved in the speaker's choice to use a Pol^{Neg}-marker rather than a Q^{Neg}-marker. However, it leaves open the possibility that the speaker has this choice due to how syntax is structured.

The details of how sentential negation is derived will become clear in 7. For now the main idea is that these contraries in contradictory clothing show that the sentential negative marker must have overtly moved in syntax from a position where it can express contrary negation to a position where it takes sentential scope.

5.2.2.2 PP-adjuncts and reconstruction

Another argument for reconstruction and hence for movement is based on the scope of negation with PP-adjuncts.

A sentence like (13a) might potentially have two interpretations. However, only the interpretation in (13c) is available and not the interpretation in (13b). One reading is that the event of cutting my salami with a hacksaw did not take place, and in fact that the salami was not cut. This is the reading in (13b). However, this reading is not available. As noted by Stockwell et al. (1973:250-251), a PP-instrumental adjunct (in this case *with a hacksaw*) cannot modify a negated event (in this case *cut the salami*). The other interpretation is that I did cut the salami, but NOT with the hacksaw, (13c). This is the more likely interpretation. For this interpretation the negation is obligatorily interpreted as taking scope over the PP-instrumental adjunct.

(13) a. I don't cut my salami with a hacksaw. (Stockwell et al. 1973, cited in [54]Horn1989)

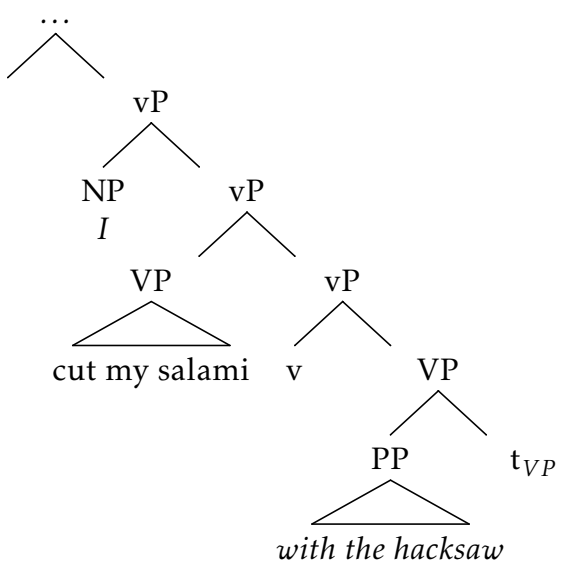
b. ≠ It is with a hacksaw that I don't cut my salami.
c. = It is not with a hacksaw that I cut my salami.

If we assume that negation is base-generated in English in a position in between tense and the vP, for instance in NegP (Haegeman and Zanuttini 1991, Haegeman 1995, then it remains unexplained how negation can scope over the PP only and still reach its canonical (sentential) position at PF. Any account for these would then have to be based on the interplay between negation and focus, an approach also taken by Horn (1989:515-517). For him these sentences make use of regular predicate denial, but associate due to the previous discourse context with one particular constituent which receives 'the intonation peak' (Horn 1989:516).

However, when we adopt a low base-generated position for negation and Cinque (1999)'s approach to circumstantial PPs, then the scope behavior can be explained by assuming LF-reconstruction. Cinque (1999) base-generates PP-complements and circumstantial adjuncts (which include instrumental PPs like *with the hacksaw*) in a VP-shell (Larson 1988) dominating the main verb and the direct object, as in (15) for the affirmative sentence in(14).

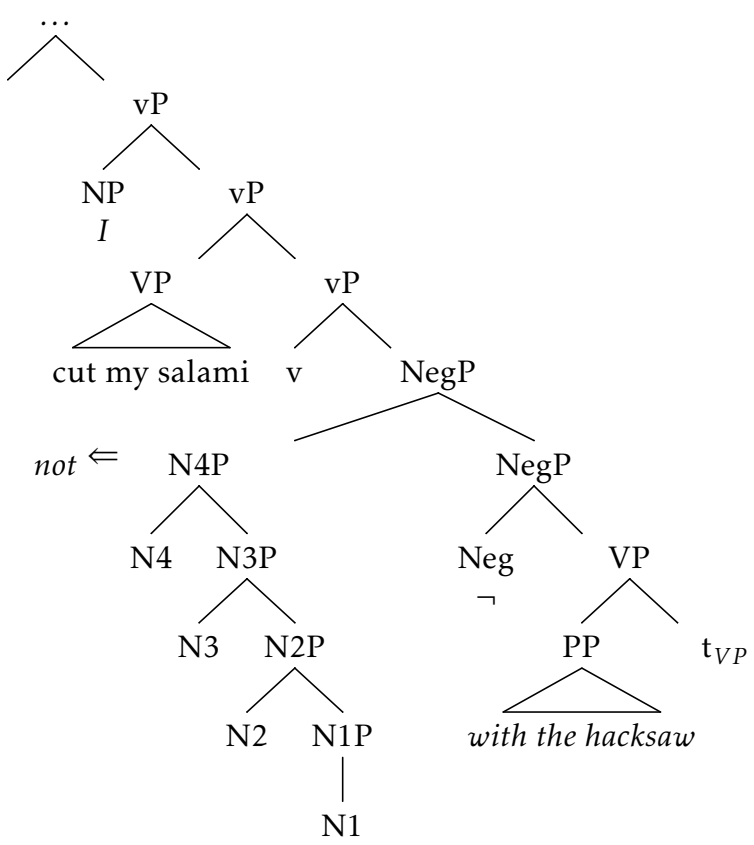
(14) I cut the salami with the hacksaw.

(15)



If we now adopt the approach proposed here, then NegP is base-generated on the VP-shells in which the PP is contained. Even though the negative spine in the specifier of NegP will move in syntax to check its features (not represented in the derivation in (16), but see chapter 7), the negative spine will be able to reconstruct at LF in its base-position, allowing for the reading in (13c).

(16)



The same low scope of negation can be observed for the sentences listed in (17)-(19):

(17) a. Angelina didn't do the job on her own.
b. = It is not on her own that Angeline did the job.
c. ≠ It is on her own that Angeline didn't do the job.

(18) a. John doesn't walk home slowly.
b. = It is not slowly that John walks home.
c. *neq* It is slowly that John doesn't walk home.

(19) a. I don't get up early at home. (from:Stockwell et al. (1973))
b. = It is not early that I get up at home.
c. ≠ It is early that I don't get up at home.

All these examples illustrate that negation is interpreted as having scope over the VP-modifier. If we assume a low base-position for negation these scope facts can be explained.

5.2.3 Conclusion

In this chapter I presented arguments for the claim that negation is base-generated low on the AP or VP. I argued that the lowest negative marker in the negative spine, the

Q^{Neg}-marker, shows where the spine needs to be anchored. I also showed data which illustrate reconstruction effects for negation, namely with negation being interpreted as taking scope solely over the lexical predicate and not over the proposition. In the next chapter I explain which Neg-related projections there are in the clausal spine.

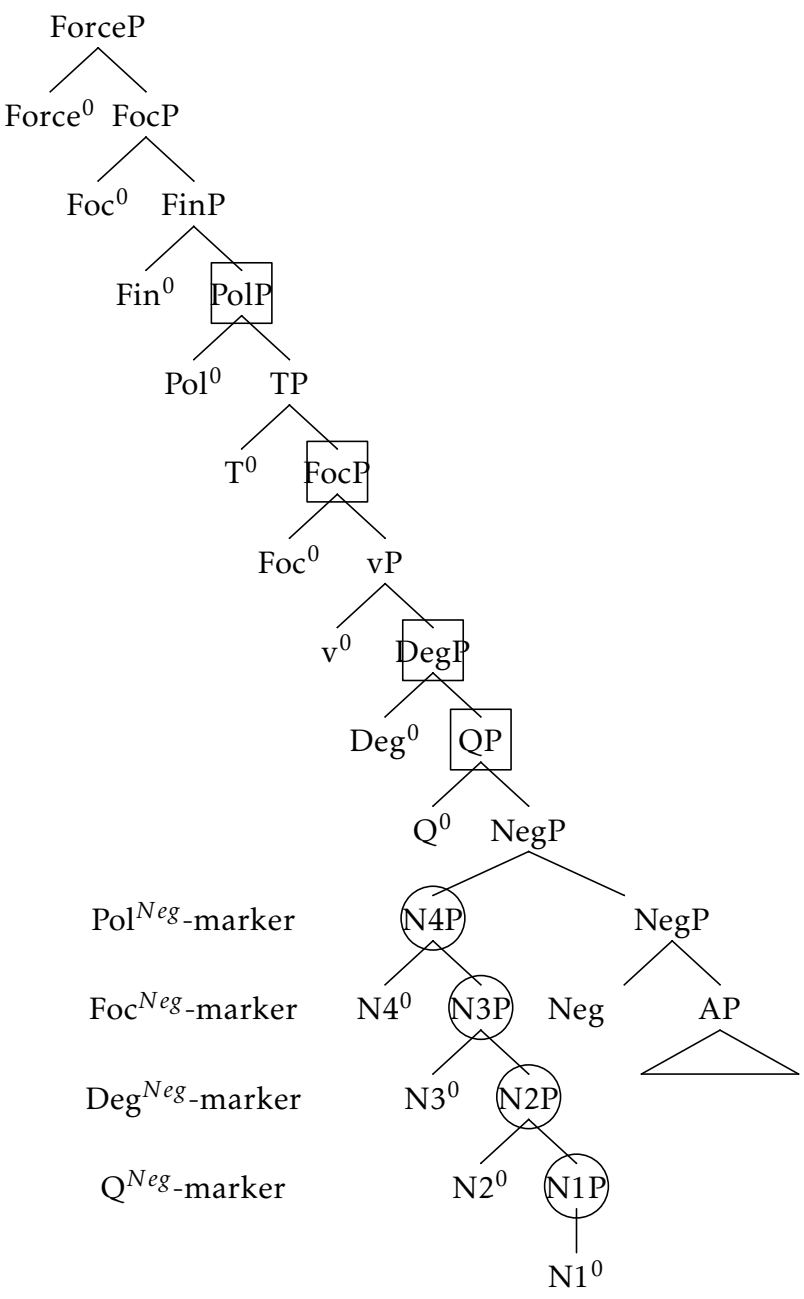
6

Neg-related projections in the clause

6.1 Introduction

In this chapter I discuss four projections in the clausal spine, namely QP, DegP, FocP and PolP, which I consider scope projections for the negative scope markers in SpecNegP. The projections in the clausal spine correspond to the four layers in the nanospine in SpecNegP (4). The structure in (12) gives an overview.

(1)



In chapter 7 I show how the negative spine in SpecNegP interacts with these four functional projections in the clausal spine.

6.2 Four clausal projections

6.2.1 QP

I have proposed that Q^{Neg}-markers are the spellout of N1P in the nanospine (4). Q-markers in the nanospine take scope in a clausal QP, one of the functional projections, which Corver (1997b,a) – building on the work by Bresnan (1973) and Jackendoff (1977) – argues is part of the extended functional projection on AP. How the feature in the nanospine, namely the feature on N1, precisely takes scope in the clausal QP is

discussed in chapter 7. For now I focus on the nature of QP and its relation with AP.

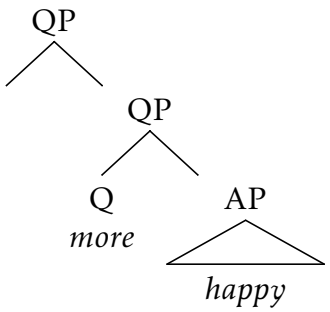
QP is one of two functional projections in the extended projection of AP. The other projection is DegP which I discuss in more detail in the next section (6.2.2). DegP dominates QP. According to Corver (1997b) constituents that can occur in the head of QP are *more*, *less*, *enough*. These elements license *so*-pronominalisation, as illustrated in (2).

(2) a. John is fond of Mary. Bill seems much less so.
b. Of all the careless people, no one is more so than Bill.
c. John is good at mathematics. He seems enough so to enter our graduate program.
d. The police searched the big room carefully, but the small room less so. (Corver 1997b:126)

Intensifiers such as *very*, *terribly*, *completely*, … are located in SpecQP. A phrase like (3) hence has a structure like (4) according to Corver (1997b).

(3) more intelligent

(4)



Corver (1997b:131) proposes that Q^0 is an operator, which can theta-bind a referential argument position in the adjectival predicate, much in the same way as D^0 can bind a referential argument position in a nominal predicate and T(ense) can do so for a verbal predicate (Higginbotham 1985, Williams 1981). This process is called theta-binding. Corver (1997b) follows Zwarts (1992) in his assumption that the referential argument position in the adjectival predicate is Grade (G), an argument position over degrees[1]. The theta-structure of a predicate like *tall* is as in (5), with 1 referring to the theme argument and G to the open argument position over degrees (Corver 1997b:131).

(5) tall, + V, + N <1, G>

When the referential argument G is not bound by a specific operator the default denotation of the predicate is 'each degree of tallness' (Corver 1997b:132). However, when

[1]It is beyond the scope of this dissertation to go into degree semantics and the extensive literature on gradability. I refer the reader to Kennedy (1999), Kennedy and McNally (2005), Kennedy (2007), Doetjes (1997, 2007), Constantinescu (2011), Vanden Wyngaerd (2013) and many others.)

a Q-modifier like *more*, *less*, *enough* is present, then the open referential argument is bound by Q. For a sentence such as (6) Corver (1997b:132) says "… the comparative quantifier *more* theta-binds the degree argument of the adjective *intelligent*; it restricts the denotation of the adjective by picking out one degree from the set of degrees of intelligence and comparing this degree to the degree of intelligence expressed or implied by the *than*-phrase".

(6) John will never be [$_{QP}$ more$_i$ intelligent<1,G$_i$> than his sister].

With respect to the negative Q^{Neg}-markers I discussed in chapter 4 (e.g. English *un-*), I propose that these markers also bind the open argument position in the lexical predicate.[2] To give an example: when the negative Q^{Neg}-marker *un-* combines with an adjectival gradable predicate like *happy*, it does not simply negate the predicate, but rather it makes a statement about how 'not happy' someone is, i.e. negates the degree component in the interpretation. *Un-* encodes that the amount of happiness is extremely low on the scale of happiness. I have shown this schematically in (7). The quantity of happiness is at the outer end of the negative part of the scale of happiness. This kind of negation – as already discussed in chapters 3 and 5 – is also referred to as contrary negation.

(7)

1	2	3	4	5	6	7	(8)	(9)	(10)
happy				not happy					unhappy

The main claim of this section is that the Q^{Neg}-markers, which correspond to N1P in the nanospine, can take scope in QP in the same way as other Q-items do. I discuss the more technical side of how Q-negation arises in chapter 7.

6.2.2 DegP

The next layer in the nanospine is N2P. This layer spells out Deg^{Neg}-markers. Their distinctive feature N2 allows them to take scope in DegP, the other functional projection which Corver (1997b) argues is part of the extended projection of AP.

I provide Corver's motivation for postulating two projections which both express degree, namely QP and DegP, and then I argue for a modification of Corver's proposal. Finally, I show how Deg^{Neg}-marker like English *non-* express degree, rather than quantity.

The elements which Bresnan (1973) and Corver (1997b) claim can occur in Deg^0 are

[2]However, in the next section 6.2.2, I argue that there are two open argument positions in an adjective: G and Q(uantity) with QP binding Q and DegP binding G. At the moment it suffices to know that the functional projection QP is a quantificational operator which is capable of binding an argument position in the adjective.

the determiner-like degree words *so*, *as*, *too*, *how*, *that*. Corver (1997b) provides support for distinguishing these degree words from the quantifier-like degree words on the basis of the fact that Deg-elements, unlike Q-elements, do not license *so-* pronominalisation.

(8) *John is fond of Sue. Maybe he is even too so.

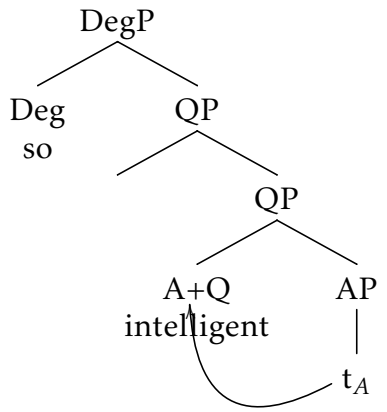
When *much* is inserted in between the Deg-element and the adjective, as in (9), *so*-pronominalisation is possible.

(9) John is fond of Sue. Maybe he is even too much so.

The fact that dummy *much* needs to be inserted in the case of *so*-pronominalisation with Deg-items, makes Corver propose that a phrase like (10) also has an underlying QP. However, in the absence of an overt element in Q^0, A^0 moves to Q^0.

(10) so intelligent

(11)



Based on these data, Corver proposes that every DegP also implies the merger of QP. Corver thus argues for the *split degree hypothesis*, a hypothesis concerning the functional structure of APs proposed by Bresnan (1973) which involves the postulation of two functional positions for degree items.

An extra argument for the distinction between Q-items and Deg-items comes from Troseth (2009). Troseth (2009) shows that unlike QP-related degree items, Deg-items can give rise to degree inversion. In the example in (12a) the inverted DP consisting of the Deg-element *too* can give rise to inversion with the indefinite article. However, a DP containing intensifier *very*, which is argued to be in SpecQP, cannot give rise to inversion, (12b).

(12) a. Attila is too good (of) an athlete.
b. *Atilla is very good (of) an athlete. (Troseth 2009:38)

Precisely as described for Q-items, Corver proposes that Deg-items are also operators that can bind the open referential argument position. The Deg-item *that* in (13) for

instance specifies, according to Corver (1997b:132) that 'the set of degrees of tallness *is restricted* [kdc] to a specific point on the scale of degrees of tallness, whose value is contextually determined'.

(13) I will never be [$_{DegP}$ that$_i$ tall<1,G$_i$>]].

However, at this point a problem arises. The fact that Q^0 is claimed to be present – even when it is not overtly realised – does not prevent it from being an operator and thus from being able to bind an open argument position in the adjective. This means that whenever Deg^0 is present, there are two potential binders for only one argument position in the adjective. When an operator cannot bind an argument, this leads to vacuous quantification and presumably to ungrammaticality.

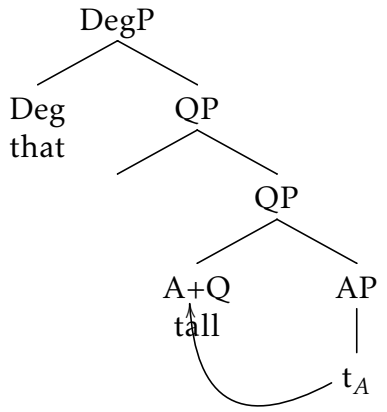
The reason why Corver assumes there is only one argument position in the adjective is the ungrammaticality of the data in (14). Corver argues that (14) is ungrammatical precisely due to vacuous quantification: since the Q-items (*more*, *less*) have already bound the open argument position <G> in the adjective, the Deg-items (*too*, *how*) have no argument to bind anymore. This leads to ungrammaticality.

(14) a. *John is too more interesting.
b. *John is how less tall.

In order to overcome the problem that arises due to the empty Q^0, Corver proposes that for a sentence like (15), A^0 has to raise to Q^0 for locality reasons, as illustrated by (16). In this way, Deg^0 can bind the referential argument in the adjective in a local configuration. Corver claims that this prevents vacuous quantification.

(15) That boy is that tall!

(16)



However, it is unclear how raising of A^0 to Q^0 would prevent vacuous quantification. If Q is an operator – even if it is empty – then raising of the adjective to Q^0 would presumably lead to binding of the referential argument G in A^0 by the empty operator in Q^0. This would leave Deg^0 without an argument to bind and would thus lead to vacuous quantification. Moreover, there are instances to be found where Deg- and

Q-items co-occur, as illustrated by (17).

(17) a. Sadly, people's dedication to make marriages work are nowhere near *as strong enough* as they once were.[3]
b. *How more* crystal-clear can I be?[4]
c. An opportunity for Melvin bragg to show-off *how more intelligent* he is than the rest of humanity[5]
d. ?Incredible! He is that less tall than Jim!

Within the light of (17), the ungrammaticality of (14a) could be attributed to semantic incompatibility of *too* and *more*. With respect to (14b), the sentence improves considerably if a *than*-clause is added, as in (18).

(18) I am surprised by how less tall than Jim John is.

Given that Deg- and Q-items can co-occur, as in (17), and given the problem sketched with respect to an empty Q, there is reason to assume two argument positions in the adjective: one could be bound by Q^0 and other by Deg^0. I thus propose that gradable adjectival predicates do not only have <G> as an open argument, but also <Q> (which stands for Quantity). Any gradable adjective thus comes with a <Q> and <G> open argument. I also assume that the presence of these arguments triggers the presence of the functional projections in the clausal spine. When the open argument <Q> in the adjectival predicate is bound by an empty operator, I propose it denotes "any amount of X". When the argument <Q> is bound by an overt element in Q^0, then the adjectival predicate denotes "a certain amount of X". When the argument <G> is bound by an empty operator, the predicate denotes any degree of X, whereas when it is bound it denotes "this degree of X". The predicate structure for a gradable adjective like *tall* is thus as in (19):

(19) tall, + V, + N <1, G, Q>

As an illustration of how a Deg^{Neg}-marker expresses degree rather than quantity (as is the case for *un-*, section 6.2.1), consider the adjective *American*. When the adjective combines with the Deg^{Neg}-marker *non-*, it yields the compound *non-American*. In this case, the negative marker does not express a certain amount of 'Americanness', as it does in the presence of the Q^{Neg}-marker *un-*, but it restricts the degree of Americanness to a specific point on the scale of Americanness, namely the point zero.

[3]http://www.wrongplanet.net/postp199094.htmlhighlight=
[4]http://rapgenius.com/Kid-cudi-can-i-be-lyricsnote-1811588
[5]http://www.readitswapit.co.uk/UserBooks.aspx?UserID=16576

(20)

1	2	3
American	half-American	non-American

Summarizing, the present section provides an update with respect to the previous section: the Q^{Neg}-markers, after having been attracted to Q (in a manner to be discussed in 7) bind <Q> in A and the Deg^{Neg}-markers bind <G> in A, likewise after having been attracted to Deg.

6.2.3 Low FocP

Foc^{Neg}-markers are characterized by the presence of the feature N3. They are the spellout of N3P. Due to the presence of N3 Foc^{Neg}-markers are able to take scope in a clause internal FocP, a position dominating vP which has been independently argued for by Belletti (2001, 2004), Jayaseelan (2001, 2008), Kandybowicz (2013). Belletti (2001, 2004) argues on the basis of the position of post-verbal subjects in Italian, which are associated with new information focus, that the position which hosts these subjects must be a focus position, hence the label FocP.[6]

I propose that in negative sentences which involve Foc-negation (and thus mostly also Pol-negation (see analysis in 8)) this low FocP is a scope position for negation.[7]

That there is a relation between focus and negation is generally acknowledged (Jackendoff 1972, Kratzer 1989, Horn 1989, Herburger 2000, Han and Romero 2001 and many others). The relation between sentential negation and left peripheral focus is explored in a number of syntactic accounts (Rizzi 1997, Haegeman 2000, Puskás 1998, Butler 2003, Puskas 2012). Butler (2003) 's proposal is interesting for my purposes since it is the only proposal I know of which also uses a low FocP to host negation.

Butler (2003) argues that the expression of negation can take scope in a high or low FocP, depending on whether negation interacts with epistemic modals or with root modals. The aim of his proposal is to capture the scope interactions between modal verbs and negation that are illustrated in (21).[8] Negation outscopes modals expressing root possibility, as in (21a), but scopes under modals expressing root necessity, as in

[6]The left peripheral FocP (Rizzi 1997) is argued to be associated with contrastive focus. Rizzi (1997) argues that CP can be decomposed into ForceP, *TopP, FocP, *TopP and FinP. The topic positions are optional in his template and recursive.

[7]This claim involves a strong prediction: namely that other focussed constituents cannot occupy this position in negative sentences. Negative and affirmative sentences are thus under this proposal different with respect to their information structural properties. It is beyond the scope of this dissertation to prove this claim, but I I come back to this issue and to some implications with respect to Belletti (2004, 2008a) in chapter 10.

[8]I come back to the interaction between modals and negation in chapter 8. For more relevant literature on the interaction between modals and negation see amongst others: Cinque (1999), Cormack and Smith (2002), Iatridou and Zeijlstra (2009), Breitbarth (2011), Iatridou and Sichel (2011), Temmerman (2012).

(21b). With respect to epistemic modals, negation scopes below epistemic necessity modals, (21c), but above epistemic possibility modals, as in (21d).[9]

(21) a. The children can't do that in here.
Scope: negation > root possibility
b. The children mustn't do that in here.
Scope: root necessity > negation
c. The registrar mustn't/mightn't have got my letter.
Scope: epistemic modality > negation
d. The registrar can't have got my letter.
Scope: negation > epistemic possibility
(Butler 2003:984-985)

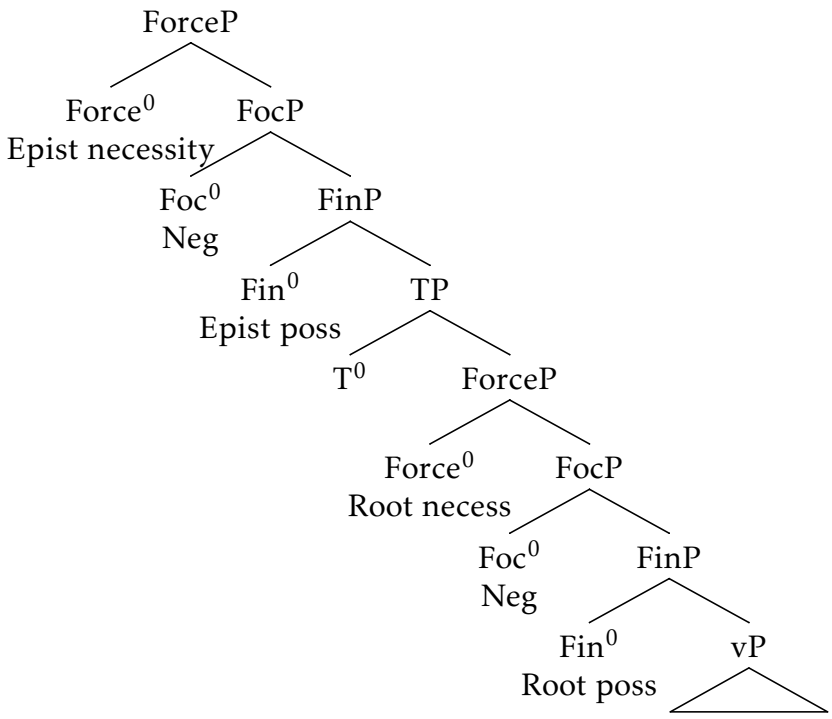
Butler's syntactic approach to account for the interactions in (21) is inspired by Rizzi's (1997)'s and Haegeman (2000)'s approach to the interaction between the left periphery and negation. In order to account for negative inversion Rizzi (1997) argues that negation is a feature [neg] in T, which takes scope in the left peripheral FocP, one of the projections of the Split CP. A negative constituent moves up to the specifier of the head that hosts T, possibly to satisfy the Neg-criterion (Haegeman and Zanuttini 1991). Haegeman (2000, 2012) also draws on data from negative inversion to argue for an articulated left periphery and proposes that negative inversion targets FocP. Haegeman (2000) argues that preposed negative constituents, as in (22), take scope in a left peripheral FocP, but negation is hosted by NegP, a projection dominating TP.

(22) On no account should you go there. (Haegeman 2000:37)

In line with proposals by Chomsky (2001) — who distinguishes between two propositional levels vP and CP — and Starke (1993), Belletti (2001, 2004), Jayaseelan (2001, 2008) — who argue for functional layers dominating vP that are reminiscent of Rizzi's left periphery — Butler argues that ForceP, FocP and FinP are present both at the vP-edge and at the CP-edge. The richly articulated structure for both phase-edges now offers a low FocP and high FocP to host negation depending on which modal verb negation interacts with. The clausal structure for the interaction between negation and modals that Butler proposes is in (23).

[9]When Butler (2003) talks about negation, he exclusively talks about sentence negation.

(23)



If negation interacts with epistemic modals, then negation scopes in the left peripheral FocP with epistemic necessity modals in Force^0 and epistemic possibility modals in Fin^0. If negation interacts with root modals, then negation scopes in a low FocP with the root necessity modals in a low Force^0 and root possibility modals in Fin^0. As such, Butler can account for the interactions in (21).[10] The position for negation in between vP and TP, which was called NegP by Haegeman (1995), has thus been replaced by a low FocP in Butler's account.

As a semantic motivation for generating negation in a high or low FocP, Butler (2003) adopts Jackendoff's (1972) semantic subdivision of a sentence in Focus and Presupposition: "the Presupposition is the sentence with the Focus replaced by an appropriate variable: when negation appears in the Focus, we obtain a sentential negation reading."(Butler 2003:984). I illustrate this with an example. The example in (24) shows the focus and the presupposition of the sentence (24b).

(24) a. Which girl ate a cookie?
b. LINA ate a cookie. (Sauerland 2005:372)
c. Focus: Lina
d. Presupposition: Someone ate a cookie.

When negation occurs in the focus of a sentence, then there is sentential negation, (25).[11]

[10] But see chapter 8 for problems with Butler (2003)'s account of negation.

[11] Because of the fact that sentential negation does not affect the presupposition of a sentence, it has been claimed to be a presupposition hole (Karttunen 1973).

(25) a. LINA didn't eat a cookie.
b. Presupposition: Someone ate a cookie.
c. Focus: Lina not

Under Jackendoff's view then negation is quantificational: it is a restricted quantifier which takes the 'unfocused part of the sentence [the presupposition, kdc] as restriction'(Butler 2003:984). This line of reasoning is also taken up by Kratzer (1989) and by Löbner (2000:232) who says that the 'negation of a sentence is formed by negating the focus of the sentence'. Jackendoff's semantic argument in combination with Rizzi's (1997) and Haegeman's (2000) syntactic approach to negation are Butler's reason to assume that negation is in FocP.

Due to the fact that sentential negation occurs in the focus of a sentence, it is also able to trigger alternatives propositions, since this is a typical property of focussed constituents (Rooth 1985, 1992, Krifka 1991, Kratzer 1991, Von Stechow 1991). For a sentence like (24b), the effect of focus on *Lina* is that a list of possible alternatives are triggered 'which are obtained by making substitutions in the position of the focused phrase' (Abush 2006:2). For the sentence in (24b) the possible alternative propositions are in (27e):

(26) [Lotte ate a cookie, Maria ate a cookie, Jerry ate a cookie, ….]

The effect of negation or negated constituents on a sentence is similar: negation is capable of triggering alternatives that 'contrast with the focal presupposition' (Puskas 2012:622 on n-words and focus). For a sentence like (27b), without special focus on *Lina*, the introduction of negation triggers many possible alternatives which can be restricted depending on the context which also yields the presupposition. In the context in (27a), the sentence in (27b), gives rise to the alternatives in (27e):

(27) a. Context: The cake is eaten. Mom points this out to Dad. He says he saw Lina eating, but didn't know whether it was cake. Mom says: Lina didn't eat the cake. She doesn't like cake.
b. Lina didn't eat the cake.
c. Presupposition: Lina ate the cake.
d. Focus: not
e. alternative: [Lina ate a banana, Lina ate a yoghurt, Lina walked, Lina took a bath, …].

Consequently, I want to propose that Foc^{Neg}-markers take scope in the clausal low FocP. The position that I call low FocP overlaps with the position that is often called NegP (Pollock 1989, Ouhalla 1991, Laka 1990, 1994) or Pol[neg] (Cormack and Smith 2002) for languages like English in which the sentential negative marker seems to surface in a position below TP.

With respect to the precise location of this low FocP, I claim it is in a position comparable to what Zanuttini (1997) refers to as NegP2 and Poletto (2008) calls MinimizerP, i.e. a position dominating perfective aspect.[12] Following proposals by Kayne (1993), Iatridou et al. (2001), Deal (2009), Harwood (To appear), Bošković (To appear) I argue that aspectual projections come with a vP-shell. Consequently, low FocP is generated on a vP-shell labelled $vP_{Perfective}$.[13]

Some diachronic support which links the position for negation below TP to focus comes from the Romance languages. Zanuttini (1997) and Poletto (2008) point to the fact that in the Romance languages the negative markers that occur in this position were originally emphatic elements, minimizers denoting a small quantity, that could not express sentential negation on their own but co-occurred with a preverbal negative marker. Zanuttini calls this position NegP2 and the negative markers that are hosted by it 'presuppositional negators'.[14] Poletto on the other hand refers to NegP2 as MinimizerP. She argues that it attracts elements which are base-generated in MinQP, a projection dedicated to minimizers in a Split NegP, which she also basegenerates low, cf. section 4.2.5.[15] A prototypical example of a negative marker which is derived from

[12]In line with Rizzi's (1997) proposal for the left peripheral FocP, I assume that also low FocPs and TopPs are only activated when needed. When they are activated they have the cartography as proposed by Rizzi (1997).

[13]Depending on whether one assumes a rigid (Cinque 1999) approach to cartography or a non-rigid approach in which functional projections are only present when necessary for the derivation, FocP could be argued to be on vP in the absence of perfective or progressive aspect. I tentatively assume that this is the case: the structure of aspectual projections and associated vP-shells is only present in the derivation when needed (Harwood 2011).

[14]The term is misleading, since rather than being presuppositional, they are focal negative markers. It is due to the fact that these negative markers occur in the focus that they give rise to a presupposition.

[15]There are interesting similarities between the proposals developed by Zanuttini and Poletto and my proposal. The most important parallel with Zanuttini's work is that in her cartography of the clause there are also four projections for negation, as in my proposal. The most important similarity with Poletto's work is the fact that she groups four different types of negative markers in one low NegP (cf. discussion in section 4.2.5). The types she distinguishes show overlap with the types I distinguish. In chapter 10 I focus on the similarities between their work and mine and I show how the similarities provide support to extend the proposal developed in this dissertation to verbal predicates.

On the other hand there are also many differences between our proposals. With respect to the empirical data, Zanuttini and Poletto focus on Italian dialects and on negative markers in combination with verbal predicates, whereas I look at nine different languages and adjectival predicates. With respect to the methodology, Zanuttini and Poletto focus only on sentential negative markers, whereas my proposal looks at both sentence and constituent negative markers, including affixal markers. Moreover, whereas the crucial classifying property for negative markers in their approach is the surface position in the clause, other properties, like semantic, functional and scopal properties are also taken into account for the classification in this proposal. Moreover, my approach starts from syncretisms between sentence negators and constituent negators and ultimately aims at 1) deriving these syncretisms in syntax and 2) unifying SN and CN. Poletto's aim is mainly to account for negative doubling, which indeed can be accounted for under her proposal and mine (cf. chapter 9.). An important difference between my proposal and Poletto's is that Poletto does not make use of a post-syntactic lexicon. The post-syntactic

a minimizer is French *pas*: at some point it started being used as an emphatic element that strengthened the sentential negative marker *ne*. It is probable that this element first took scope in FocP in order to emphasize the preverbal negative marker, before it became a full negative marker itself.[16]

Summarizing, building on proposals in Butler I proposed in this section that Foc^{Neg}-marker take scope in a low FocP. I presented syntactic and semantic arguments from-Butler (2003) who also argues for low FocP as one of the positions for negation. Sentential negation triggers alternatives, a property which is characteristic of focussed constituents in general. Finally, I presented a piece of support from language change to back up the claim.

6.2.4 PolP

Pol^{Neg}-markers are characterized by the presence of the feature N4. Due to this feature Pol^{Neg}-markers take scope in a position PolP above TP from where they give rise to sentential negative polarity (SNP) or the widest scope of negation.

The idea of a high position for negation dates back to the very early days of transformational grammar. Klima (1964) suggested that English *not* is generated sentence initially at deep structure, dominated by a node labelled Pre-S. The idea that there is a position for negation in the (low) CP-domain is also present in more recent work by Moscati (2006, 2010, 2012) and McCloskey (2011). I assume that PolP is the lowest projection in the CP-domain, immediately below FinP.[17]

The label PolP itself dates back to Chomsky (1957) and Laka (1990, 1994) who argued that negation is one of the two values that can be hosted by ΣP or PolP, the other one being emphatic affirmation. According to them affirmative polarity and negation are in complementary distribution. The label has been used by many linguists working on negation and polarity (Cormack and Smith 2002, Tubau 2008, Temmerman 2012, Poletto and Zanuttini 2013 and many others). It has on the one hand become a notational variant of NegP (below TP) (Cormack and Smith 2002) and on the other hand has been used to refer to a position dedicated to the expression of polarity emphasis

lexicon allows me to capture fine-grained distinctions between negative markers across languages, like for instance the difference between the Pol^{Neg}-marker *ne* and the Pol^{Neg}-marker *non*. Under Poletto's sytem these markers would be both in ScalarP. However, the fact that *ne* cannot spellout negation on its own, whereas *non* can would — as far as I can see — be a stipulation in her approach. Within the nanosyntactic approach taken here the property of being a Pol^{Neg}-marker on the one hand and the property of being able to give rise to sentential negation on its own can be separately accounted for. The negative nanospine gives negative markers a fixed position in the clause on the one hand, whereas the postsyntactic lexicon allows for flexibility with respect to individual negative markers. The difference between *ne* and *non*, both Pol^{Neg}-markers and thus high in the nanospine, is reflected in the size of the lexical trees in the lexicon. I explain this in detail in 9.

[16] I come back to French negation in chapter 9.

[17] For Rizzi (1997) the lowest position of the CP is FinP.

(Breitbarth et al. 2013).

PolP is used to refer to a position in which sentential negation is expressed and which is also often labelled NegP. Depending on the language under consideration, PolP has been argued to either dominate TP (Laka 1994) or be dominated by TP (Cormack and Smith 2002, Wilder 2013). According to Ouhalla (1991) this is in fact an area of crosslinguistic parametric variation with languages like Basque, Greek, Spanish, Italian having sentential negation dominating tense, and languages such as English, spoken French, Dutch, Chinese, … having sentential negation selecting vP. Ouhalla (1991) refers to this split as the Neg-parameter, which he defines as in (28).

(28) a. NegP selects TP
b. NegP selects VP

I will not assume that the position of NegP/PolP is subject to parametric variation. In my proposal PolP is a position dominating TP, more specifically I propose that it is the lowest projection of CP, immediately below Rizzi (1997)'s FinP. I also assume that this is the position responsible for the expression of sentential negative polarity (SNP), even in languages where the overt marker of negation surfaces below TP at PF (like in English). As such, my proposal is in line with Belletti (1990), Haegeman (1995), Zanuttini (1997) and Holmberg (2003) who argue that the position preceding tense is the position in which negation needs to take scope to give rise to senential negation. Zanuttini (1997) calls this position NegP1.

Finally, by proposing that sentential negation is hosted by a PolP at the edge of the CP-domain, my proposal deviates from Butler (2003). Even though I follow his account when it comes to linking negation to focus, I argue that the left peripheral FocP is not responsible for the expression of SNP. The left peripheral FocP can only host constituents which emphasize the sentential polarity that is expressed in PolP.[18]

Support for the role and the position of PolP and problems for Butler's 2003 analysis are discussed in chapter 8.

[18] In addition to the position for SNP, i.e. PolP, I assume that there is a polarity dependent position in the higher CP-domain which can host a constituent or particle which expresses polarity emphasis with respect to the polarity expressed in PolP (Breitbarth et al. 2013). The nature of this position is not quite clear and various labels have been used: FocP (Rizzi 1997, Haegeman 2000, Butler 2003, Poletto and Zanuttini 2013), ForceP or FinP (Authier 2013), or a left peripheral VerumFocus position (VFoc) (Van Craenenbroeck 2010) or CP (Moscati 2006, 2010, McCloskey 2011). This position is said to either host polarity particles, like *yes* or *no*, preposed negative constituents or negatively marked complementizers.

No matter which position in the left periphery one assumes is dedicated to polarity emphasis, I claim that it is not in this position that SNP or sentential affirmative polarity (SAP) are expressed. The dedicated position for SNP and SAP is PolP. I will provide more support for this claim in chapter 8.

6.3 Conclusion

In this chapter I discussed which projections in the clausal spine are relevant for the expression of the various subtypes of negation. Each layer or feature in the negative spine has a dependent position in the clausal spine.

I argued that Q^{Neg}-markers (and more in particular the feature N1) take scope in a functional position QP, whereas Deg^{Neg}-markers (with the distinctive feature N2) do so in DegP. I discussed semantic, syntactic and diachronic reasons for why the clause internal FocP is a good candidate to host Foc^{Neg}-markers (with the distinctive feature N3). Finally, I argued that SNP can only be expressed if Pol^{Neg}-markers (with the distinctive feature N4) take scope in PolP, a position dominating TP and below FinP.

7

Analysis: External syntax of negation

7.1 Prerequisite: Agree

To explicate the exact nature of the dependency relation between the features in the negative nanospine and the features in the clausal spine I adopt a minimalist (Chomsky 1995, 2001, Pesetsky and Torrego 2007, Bošković 2011) feature checking system.[1] The dependency relation between constituents is called Agree. Chomsky (2000, 2001) defines Agree as follows:

(1) a. An unvalued feature F (a probe) on a head H scans its c-command domain for another instance of F (a goal) with which to agree.
b. If the goal has a value, its value is assigned as the value of the probe.

Schematically this can be represented as in (2):

(2) [uF:_]…[u/iF:val]
Agree

The Agree-system I adopt is the one proposed by Bošković (2011), in which he uses a binary feature system that is valuation driven. Crucial with respect to negative markers is that in his system uninterpretable features do not lead to a crash. Only features without a value lead to a crash at the interface. For reasons that will become clear as we proceed, Bošković (2011) Agree system will be able to derive the correct results for the analysis developed here and this is the reason why I adopt it.

[1] For the compatibility of minimalism and cartography, I refer the reader to (Cinque and Rizzi 2010).

Chomsky (1995, 2001) argues that a distinction needs to be made between interpretable and uninterpretable features on the one hand and valuation on the other hand. In the example in (3) there is feminine gender on the noun (N), the adjective (A) and the determiner (D):

(3) Haec puella Romana ambulat.
this-Nom.Fem.Sg girl-Nom.Fem.Sg Roman-Nom.Fem.Sg. walks-3.Sg
This Roman girl walks. (Pesetsky and Torrego 2007:1)

However, it is not the adjective or determiner which contribute feminine gender, since they adapt their gender to the noun they co-occur with and are thus unvalued for gender. Only the noun is valued with feminine gender. The adjective and the determiner get their gender value from the noun.

With respect to the interpretable versus uninterpretable distinction, person and number features on a determiner or a noun are interpretable, i.e. they make a semantic contribution to the interpretation of that item. However, the same features on V or on T make no contribution to the interpretation of that item. Consequently, they are uninterpretable (Pesetsky and Torrego 2007).

The distinction between valued/unvalued and interpretable/uninterpretable plays a significant role in syntax, specifically that of establishing agreement relations or dependency relations between two different constituents.

For Chomsky (2000, 2001), even in the valuation driven system, Agree is always between an uninterpretable and unvalued probe and a valued interpretable goal. This is called the Valuation/Interpretability Conditional (Chomsky 2001): any unvalued probe is necessarily always uninterpretable and any valued probe always deletes its uninterpretable features. This Conditional necessarily implies the Radical Interpretability Thesis (Brody 1997) which says that each feature must get a semantic interpretation in some syntactic location. Pesetsky and Torrego (2007) relax the strong link between semantic interpretability and valuation and argue for the existence of interpretable unvalued features on the one hand, [iF: _] and uninterpretable valued features on the other hand, [uF:val]. However, at the end of the derivation all uFs need to be checked, apart from being valued as well.

I illustrate this in (4) with an example from Pesetsky and Torrego (2007). If we assume that there is a semantic category Tense (Chomsky 1957, Pollock 1989, Edmonds 1976), then the position T^0 carries an interpretable Tense feature. In Pesetsky and Torrego's system T^0 is unvalued for a specific tense, but interpretable for tense, it thus has [iT:_]. T^0 probes down and finds the verb which is uninterpretable for tense, but valued for tense with past morphology, [uT:past]. Agree takes place: [iT:_] gets a value 'past' and the uninterpretable feature on the verb gets deleted.

(4) T^0 ⋯ ⇒ T^0 ⋯$[_v$walked]
[iT:_] [uT: past] [iT:past] [~~*uT : past*~~]

(based on Pesetsky and Torrego (2007))

Both in Chomsky (2001) and Pesetsky and Torrego (2007) uninterpretable features still need to be checked, even if they are valued. This is done away with in Bošković (2011).

Bošković (2011) proposes that valued but uninterpretable features do not need to be checked by an interpretable feature when they do not make any contribution to the semantics: they can simply be deleted. An example illustrating valued uninterpretable features comes from gender on nouns in Serbo-Croatian (SC). Most gender in SC is grammatical gender and hence arbitrary. The example in (5) illustrates this point: the three different words for 'car' in SC have different genders and belong to different declension classes, but the specific gender does not change anything to the meaning of the word 'car'. Boskovic argues that all three nouns, *kola*, *auto* and *automobil* are valued for a certain gender, but that their gender is uninterpretable to the semantic component.

(5) a. Zelena kola su kupljena.
green.fem car.fem are bought.fem
'The green car was bought.'
b. Zeleno auto je kupljeno.
green.neut car.neut is bought.neut
c. Zeleni automobil je kupljen.
green.masc car.masc is bought.masc
(Bošković 2011:109)

According to Bošković (2011), the notion 'interpretability' is stripped of its link with the semantic component if we said that the gender of these nouns is interpretable in the same way as the gender of nouns like *men* and *women* are, which are both respectively specified for masculine and feminine. The gender of the latter nouns is interpretable, whereas the gender of the nouns with grammatical gender is uninterpretable. This is his argument for the existence of uninterpretable valued features.

His argument for the claim that uninterpretable valued features do not need to be checked, but can simply be deleted comes from first and second conjunct agreement (Bošković 2009) in SC. When the participle agrees with the gender of the first conjunct in a conjunct phrase (&P), then the subject follows the participle, (6a). When the participle agrees with the gender of the second conjunct, then the subject precedes the participle, (6b).

(6) a. Juče su uništena [&*P* sva sela i sve varošice.
yesterday are destroyed.pl.neut all villages.neut and all towns.fem

'All villages and towns were destroyed yesterday.'

b. [&P Sva sela i sve varošice] su juče uništene.
all villages.neut and all towns.fem are yesterday destroyed.pl.fem
'All villages and towns were destroyed yesterday.' (Bošković 2009:456)

A conjunction of two DPs is specified for number, it is not specified for gender (Bošković 2009). However, each of the two parts of the conjunct are specified for gender. The participial agreement probe which according to Boskovic is a non-split Φ-probe - probes for number and gender. A schematic representation is given in (7).

(7) $\text{Part}_{[number,gender]}$ [$_{\&P[number]}$ NP1 [gender] … NP2[gender]]]

In the case of (6a) the participial probe finds valued number on &P and valued gender on the first NP of the conjunct due to the fact that the first part of the conjunct is structurally higher than the second conjunct. However, the participle can also agree with the second conjunct, as shown in (6b). This is due to the uninterpretable and deletable status of the gender on the first conjunct.

Some more explanation is necessary to understand the argument with respect to (6b). In SC extraction of the left conjunct is allowed, (8a), but not of the right conjunct, (8b).

(8) a. Knjige$_i$ je Marki [t$_i$ i filmove] kupio.
books is Marko and movies bought
'Marko bought books and movies.'

b. *Filmove$_i$ je Marko [knjige i t$_i$] kupio.
movies is Marko books and bought

For a case like (6b), the Participial probe bears an EPP feature due to which it can attract a constituent to its specifier, cf. (9).

(9) $\text{Part}_{[number,gender][EPP]}$ [$_{\&P[number]}$ NP1 [gender] … NP2[gender]]]

As we saw in (8) NP1 is a mobile constituent, but not NP2. However, &P is also mobile. There are thus two mobile constituents: NP1 and &P. NP2 is not mobile. Since it is the constituent which values the probe that also undergoes movement, it is problematic that there are two possible valuators. Therefore, valuation is cancelled and the participle probes again. The second time it finds the second conjunct. Given that this constituent is not a candidate for movement but a valuator, cf. (6b), the participle probe agrees with the gender on NP2, but attracts the &P in which the immobile valuator is embedded, resulting in the pattern in (6b).

However, the uninterpretable gender feature on the first conjunct has not been checked against an interpretable feature. Still the derivation does not lead to a crash. Uninterpretable valued features can simply be deleted before they are shipped off for semantic interpretation. If the gender is interpretable on the other hand, as is the case

for the gender of *žene* 'women' in SC, then second conjunct agreement fails, since the gender in the first conjunct cannot be by-passed by the probe. This is illustrated by the ungrammaticality of (10).[2]

(10) ?*Sve žene i sva djeca su došla.
all women.fem and all children.neut are arrived.pl.neut
'All women and all children arrived.' (Bošković 2009:477)

To conclude, I will adopt the valuation driven system proposed by Bošković (2011). In his system the Agree relations in (11a)-(11b) are legitimate. As is the case in Pesetsky and Torrego (2007) Agree is possible between an unvalued probe and a valued goal. The interpretability or uninterpretability of the feature does not drive the agreement. The Agree relations in (11c)-(11d) and (11g)-(11h) are not legitimate due to Last Resort (i.e. Agree or movement (an operation) must happen for a formal reason): since the probe is valued, there is no reason to start probing. The Agree relations in (11e) and (11f) cannot take place, because neither probe nor goal is valued.

(11) a. X[uF:_] … Y[u/iF:val]
b. X[iF:_]… Y[u/iF:val]
c. X[uF:val]… Y[u/iF:val]
d. X[iF:val]… Y[u/iF:val]
e. X[uF::_]… Y[u/iF:_]
f. X[iF::_]… Y[u/iF:_]
g. X[uF:val]… Y[u/iF:_]
h. X[iF:val]… Y[u/iF:_]

A big difference with Chomsky (2001) is that both in Bošković (2009, 2011) and Pesetsky and Torrego (2007) two uFs can undergo feature checking, as long as the probe is unvalued. In addition in Bošković (2009, 2011) uninterpretable valued features can be deleted without having been checked. This is the main idea I want to adopt for feature checking in the syntax of negation I propose in this dissertation.

When an Agree relation is accompanied by movement of the goal to the probe I follow Pesetsky and Torrego (2007) and assume the presence of an EPP feature on the probing head which triggers movement of the goal to the specifier of the probe.

[2](10) is also grammatical with default masculine. I refer the reader to Bošković (2009) for more discussion.

7.2 Scope types of negation: derivation

7.2.1 Introduction

Up until now I have labeled the features or heads in the negative nanospine N1, N2, N3, N4 and I introduced a NegP with Neg^0. However, up until now I have not made clear yet what the precise relationship is between these negative markers, the Neg^0 and the Neg-related projections in the clausal spine. In this chapter I provide all these heads with a precise feature specification and I show how the nano-features Agree with probes on the Neg-related scope projections in the clause, thus determining the scope of the semantic negation at the level of the predicate.

I assume that the phonologically empty negative head Neg^0 on the predicate is endowed with [iNeg:Neg].[3] The presence of the head Neg^0 thus allows for a semantically negative interpretation.[4]

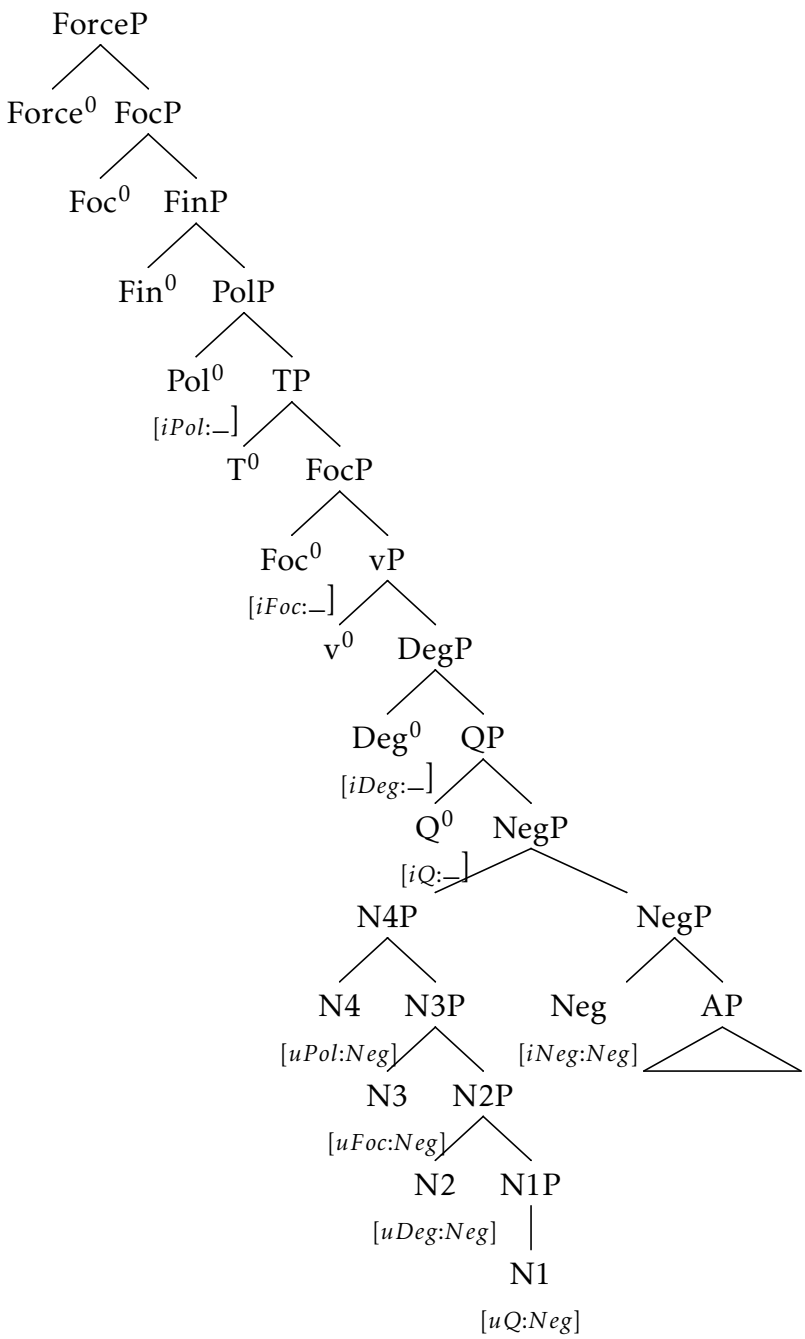
The negative features in the nanospine are all syntactically valued for negation. In addition they all have an uninterpretable scope feature, i.e. N1 is endowed with [uQ:Neg], N2 is endowed with [uDeg:Neg], N3 is endowed with [uFoc:Neg] and N4 with [uPol:Neg]. In the clausal spine there are Neg-related heads, more precisely scope positions for negation: Q^0, Deg^0, Foc^0 and Pol^0. These scope heads are all interpretable for scope, but syntactically unvalued. They can thus function as probes. They probe for the unintepretable but valued features in the negative nanospine and get valued by them. The probes thus get syntactically valued for negation by the features in the nanospine, but semantically they are interpretable for scope: polarity, focus, degree or quantifier scope. The negative markers in the nanospine are thus rather scope markers than negators. They determine the scope of the semantically interpretable predicate Neg^0 by undergoing Agree with a probe on a scope position in the clausal spine. [5]

[3] I assume that the valuation of the phonologically empty but semantically interpretable Neg^0 is a consequence of insertion of the negative nanospine in SpecNegP. I abstract away from how this valuation precisely takes place.

[4] The proposals in the literature which make use of a semantically interpretable but phonologically empty negative operator are numerous (Zeijlstra 2004, 2008, Penka 2007, 2011, Haegeman and Lohndal 2010 and many others). Zeijlstra (2004) also proposes that the negative marker *ne* in strict negative concord languages like Czech is [uNeg] and that it needs to be licensed by an abstract sentential negative operator which has [iNeg]. The idea of negative markers as scope markers is thus also present in his work. However, all these proposals have the negative operator at the sentence level: uninterpretable negative constituents, carrying [uNeg], check their feature against this operator to give rise to sentence negation. This leaves most of these accounts with a problem when it comes to cases of 'constituent negation'. Constituent negation is therefore either relegated to the lexicon, ad hoc negative operators are introduced at the constituent level, or extra layers of embedding (for instance clausal structure) are called in to rescue the propositional nature of the negator. As argued for in Part I and chapter 6 and in line with Horn (1989) there is ample cross-linguistic evidence for the hypothesis that negation is a predicate negator. Therefore, I assume that negation is semantically interpretable at the level of the predicate. From there its scope can be widened.

[5] The relation of the negative markers in the nanospine with respect to the semantically interpretable

(12)



In what follows I provide a step-by-step discussion of all negation types.

7.2.2 Q-negation

In this section I discuss how and when Q-negation arises. I argue that Q-negation necessarily involves the presence of the feature [uQ:Neg] on N1. It can — but need not — involve the presence of a Q-probe in the clausal spine. Depending on whether

Neg^0 is comparable to what Zeijlstra (2004) proposed for the relationship between negative concord items and the expression of sentential negation. Zeijlstra (2004) treats negative indefinites as syntactically valued markers which need to be checked against a semantic negative operator at the sentential level. However, also in his system constituent negation remains essentially unexplained.

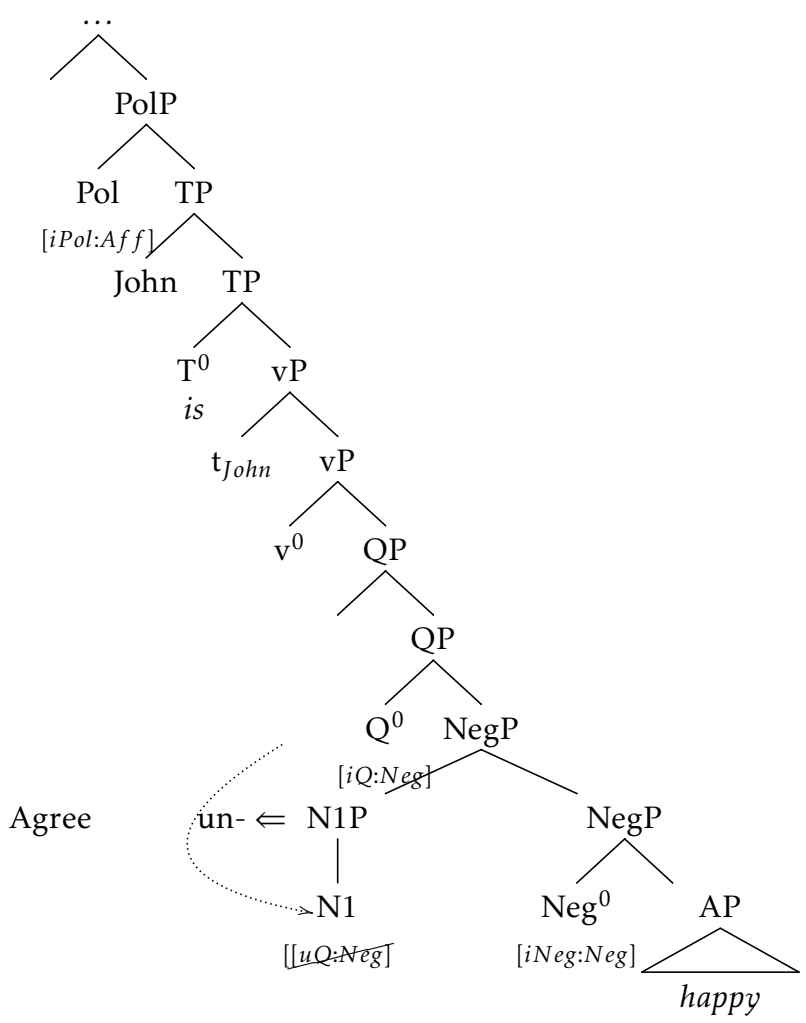
a probe projects or not, different interpretations arise.

When the adjective is a gradable predicate, as for instance with *happy*, then a Q^0-feature in the form of a functional head Q^0 will project in the clausal spine in order to bind the open referential argument <Q> in the adjective (see chapter 6 section 6.2.1). The feature on N1, [uQ:Neg], Agrees with [iQ:_] on Q^0. [iQ:_] gets valued as [iQ:Neg] and the uninterpretable feature on N1 gets checked and deleted. As such, the valued Q-probe binds the referential open argument <Q> in A^0.

When Pol is merged in the clausal spine, there are no features to value [iPol:_] and hence Pol gets a default affirmative valuation, [iPol:Aff] (Cinque 1999, Starke 2001).[6]

I propose a structure as in (13) for a sentence like *John is unhappy*. I indicate Agree with dotted lines and overt movement with full lines.

(13)



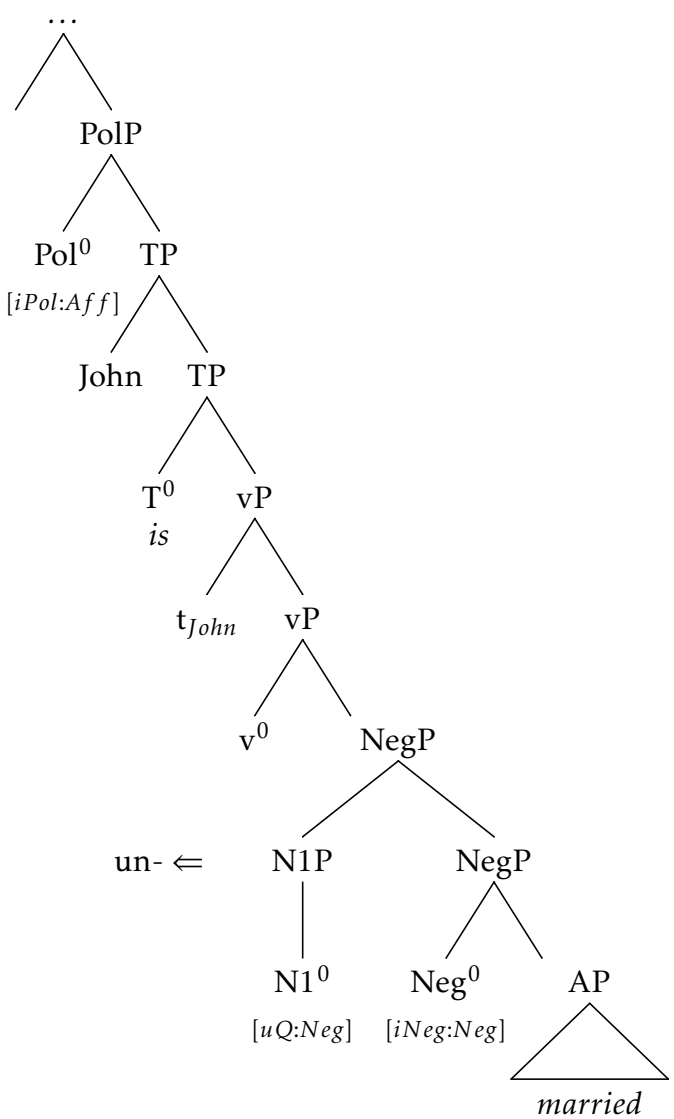
[6]In a case of double negation, as in (i), another negative spine is merged in another NegP on top of the previous one.

(i) She isn't unhappy.

For a sentence like (i), this would lead to negative valuation of [iPol:_], since the second negative marker is a Pol^{Neg}-marker. See section 7.2.5 for how Pol-negation arises.

When an adjective is not gradable, as is the case for instance, for the adjective *married*, I propose that QP on top of AP is not projected. In such a case there is no head or feature in the clausal spine to probe for [uQ:Neg] on N1. Consequently, the uninterpretable Q-feature cannot be checked. Under Chomsky (2001), Pesetsky and Torrego (2007) this would lead to a crash. However, under the sytem proposed in Bošković (2009, 2011) this does not lead to a crash due to the fact that we saw that uninterpretable valued features can be deleted without checking. Consequently, the structure does not crash. However, the kind of negation that arises is stripped of its Q-effect: i.e. there is no contrary interpretation, since the uQ feature did not get checked against an interpretable Q-feature and consequently does not take scope in its usual position. The interpretation therefore is a contradictory interpretation that arises due to the fact that the empty Neg^0 has [iNeg:Neg] and can provide a basic contradictory negative interpretation to negative markers in its spine. The structure for a nongradable negative predicate like *umarried* is as in (14).

(14)



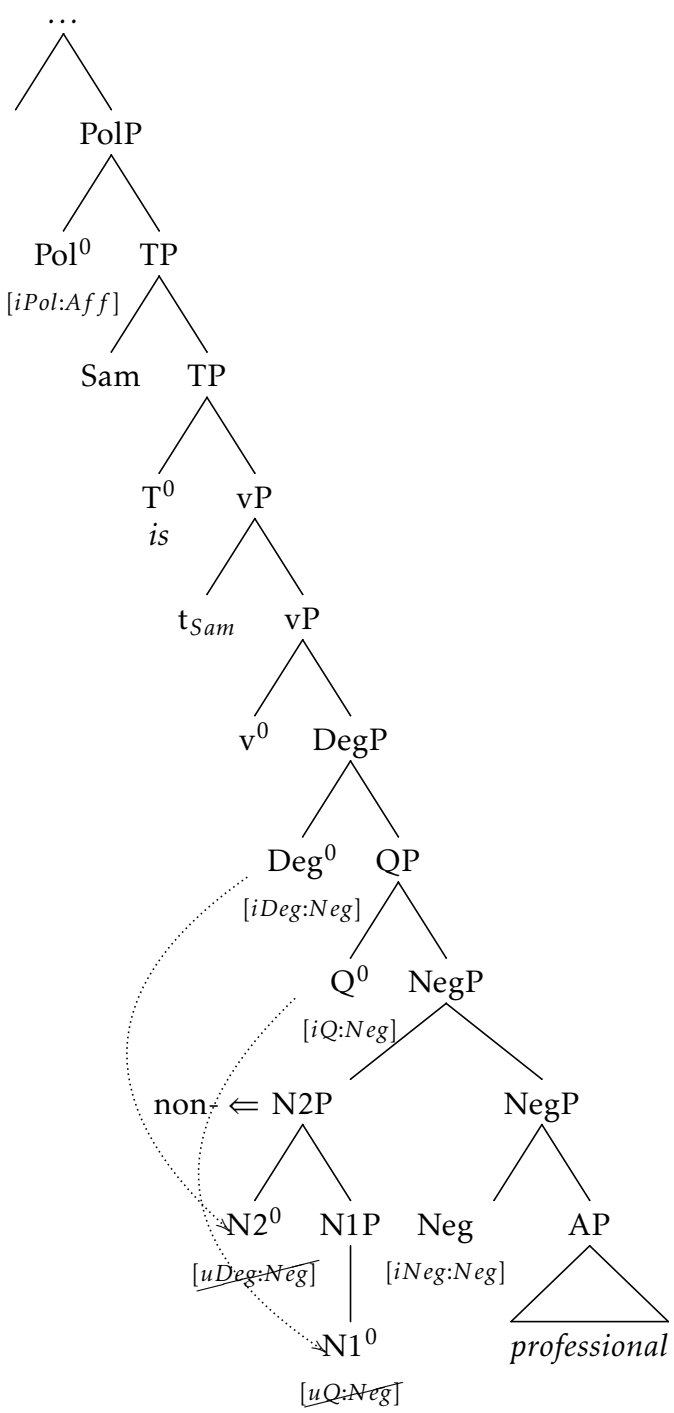
I showed in this section how Q-negation arises and how Boskovic's Agree system derives the correct results with respect to negative markers. The uninterpretable feature of a Q^{Neg}-marker can be deleted without checking against an interpretable probe and still give rise to negative meaning due to the fact that negation is already interpretable on Neg0. The uninterpretable features on the negative markers are thus responsible for the scope value of the negative marker, but not for the negative meaning. Uninterpretability of the scope value can still lead to negative interpretation due to the presence of the predicate negator in Neg0.

7.2.3 Deg-negation

In this section I illustrate how Deg-negation arises. I show that Deg-negation necessarily involves the presence of [uDeg:Neg] on N2 and sometimes — though not necessarily — a Deg-probe in the clausal spine.

Deg-negation arises when the negative sequence consists of the layers N1 and N2 which together spell out a Deg^{Neg}-marker. Due to the presence of two open argument positions in gradable adjectival predicates, QP and DegP project in the clausal spine. First the Q-probe, endowed with [iQ:_] probes down. It finds valued Q-features in its c-command domain and Agrees with it. Q gets a value and the uninterpretable features on N1 are checked. When Deg is merged in the clausal spine, it also probes down and it finds in its c-command domain the features on N2, [uDeg:Neg]. Deg gets valued as negative and Deg-negation arises.

(15)



In the presence of a non-gradable adjectival predicate, like *geographical*, QP and DegP do not project in the clausal spine. Negative uninterpretable Deg-features cannot be checked against an interpretable head. Nevertheless, there is no crash of the derivation, since as argued before negative uninterpretable but valued features can simply be deleted.[7]

[7]That there is no interpretational difference between a a negative Deg^{Neg}-marker that has been checked (i.e. in the presence of gradable adjectives) and one that has not been checked (in the presence of non-gradable adjectives) is not surprising, given that the interpretation of *non* and the interpretation of the basic semantic negator in Neg are both contradictory negations.

7.2.4 Foc-negation

In this section I discuss how Foc-negation arises and how it always necessarily involves a head N3 in the nanospine which is endowed with [uFoc:Neg].

For a gradable predicate, QP and DegP are merged in the clausal spine. Their probe gets valued by the features on N1 and N2 respectively, in the way described in sections 7.2.2 and 7.2.3. When the predicate is non-gradable, the uninterpretable features on N1 and on N2 will not be checked. However, as discussed before, this does not lead to a crash.

In the tree in (17) I depict how Foc-negation arises in the context of a gradable predicate. Foc^0 is merged and probes into vP. It locates [uFoc:Neg] on N3 and Agrees with it.[8] [iFoc:_] gets valued for negation and becomes [iFoc:Neg]. The uninterpretable feature [uFoc:Neg] on N3 gets checked and deleted.

Since Foc^0 also has the EPP property, the entire negative spine is pied-piped to SpecFocP.[9] When Pol^0 gets merged at a later stage, its probe [iPol:_] cannot be valued with negative features, since there is no feature left on the negative spine that can value Pol^0. The Pol-probe gets a default affirmative value, [iPol:Aff]. The structure for a sentence like (16) is in (17).

(16) She is not happy, but sad.

[8] It is not clear to what extent and if so how the concept of 'phase' (Chomsky 2000, 2001) can be implemented in the cartographic/nanosyntactic framework with its articulated structure comprising many projections. In a phase-based approach to the data, the probing of Foc^0 into vP is acceptable under the revised PIC, also called PICII, (Chomsky 2001), defined in (i).

(i) Given structure [ZP Z … [HP α [H YP]]], with H and Z the heads of phases: The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations. (fromRichards (2011:78) afterChomsky (2001))

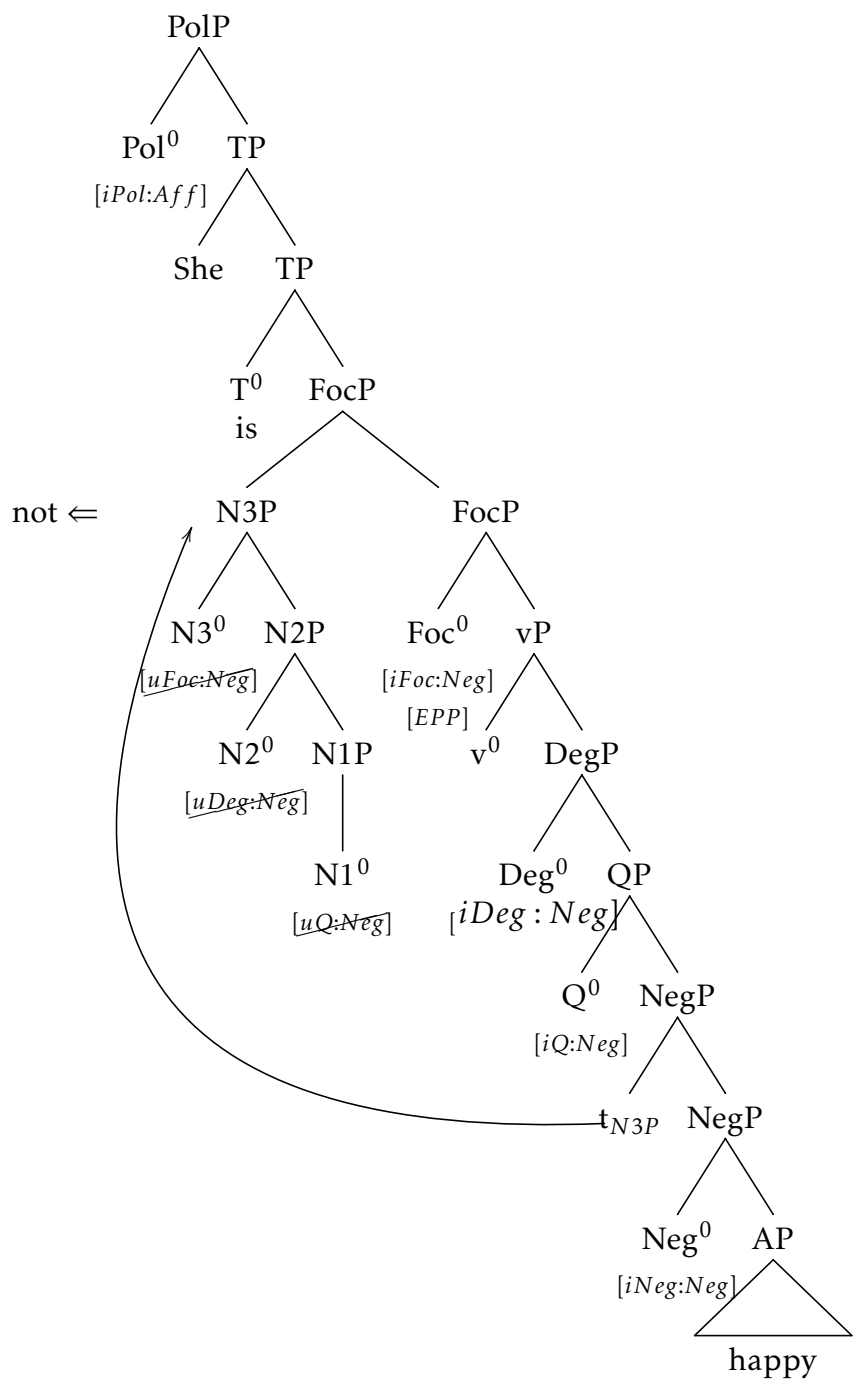
Under the revised PIC, material in vP remains accessible for further computation until merge of the new phase head, i.e. C^0. PICII thus differs from the original PIC, as defined in (ii).

(ii) In phase α with head H, the domain of H is not accessible to operations outside α; only H and its edge are accessible to such operations. (definition from Richards (2011))

Within the present account, the first head of the CP-phase is Pol^0.

[9] As mentioned before, the use of SpecFocP for negative scope markers makes predictions with respect to the information structural properties of negative clauses and the fact that low FocP has been argued to host postverbal new information subjects in Italian and the subject of certain clefts in French (Belletti 2001, 2004, 2008a,b). I discuss this in more detail in chapter 10.

(17)



Summarizing, Foc-negation can arise when the negative spine consists of N1, N2 and N3. It effectively arises when [uFoc:Neg] on N3 Agrees with the clausal Foc-probe followed by attraction of the negative spine to SpecFocP. There are now in the clause several interpretable features. However, this does not lead to multiple interpretations for negation, since there is only one feature, namely in Neg^0 which is interpretable for negation. The other interpretable features are scope features. They are syntactically valued for negation, but semantically interpretable for scope, i.e. they are interpretable for Q-scope or Deg-scope or Foc-scope. In an affirmative sentence, these scope positions can be filled by affirmative constituents.

7.2.5 Pol-negation

7.2.5.1 Two registers

In this section I discuss how Pol-negation or sentential negation arises. I distinguish between two different forms of Pol-negation in English: the informal *n't* and the formal *not*. However, this does not mean that there is no overlap between the registers and that informal *n't* cannot be used in formal contexts.

In general Pol-negation can arise in English when the features N1, N2, N3 and N4 are present in the negative spine, cf. section 4.2.4. Specifically, when [uPol:Neg] on N4 is checked against a Pol^0 (see section 6.2.4), then Pol-negation arises. The implication is here that there can be [uPol:Neg] without checking. I discuss this in chapter 8. Before I discuss how this takes place, I will make a detour to language registers in English (Del Pilar Castillo Gonzàlez 2007).

Pol-negation can take two different forms in English. It can have the full form *not* and the contracted form *n't*. The full form is syncretic with the Foc^{Neg}-marker *not*. I consider both Pol^{Neg}-markers to belong to different registers of English. The full negative marker is more formal and predominantly used in written language. The contracted negative marker belongs to a more informal register and is more often used in spoken language or certain kinds of written language, e.g. fiction (Quirk et al. 1985, Kjellmer 1998, Del Pilar Castillo Gonzàlez 2007).

In line with Jespersen (1917) and Zeijlstra (2004:54-55) I consider the register-dependent forms of the Pol^{Neg}-marker a reflection of historical change that is taking place. The two forms reflect two different stages of the language. However, these two stages are synchronically available. The full form *not* reflects an earlier stage on the path of grammaticalisation than *n't*. This can not only be deduced from the fact that the formal (written) register often reflects earlier stages of the language, but more importantly from the fact that it is typical of grammaticalisation processes that lexical items become more and more functional over time, eventually resulting in phonological weakening, as is the case for *n't*. The grammaticalisation cline for negative particles is given in (18).

(18) argument > adverbial emphasizer > phrasal negator > clitic > affix > ∅ (Breitbarth to appear:176)

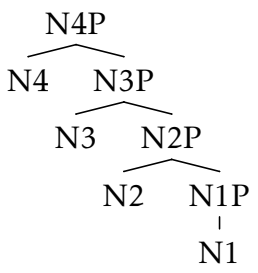
It is not uncommon that two different stages in a grammaticalisation process are present in a language at the same point.[10] At this point, I will not dwell any longer on the diachronic perspective, but I will come back to it in chapter 9.

I want to argue that in present-day English there are two different systems present for Pol^{Neg}-markers. Whereas there is only one lexical item spelling out the syntactic structure for Pol- and Foc-negation in formal English, (19), there are two different

[10] Breitbarth (to appear:182) calls this *diversification*.

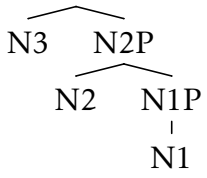
lexical items for Pol- and Foc-negation in the informal register of English, (20)–(21).

(19) Pol- and Foc-negation: formal register

{/nɒt/, 

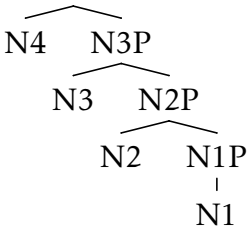
, NEG }

(20) Foc-negation: informal register

{/nɒt/, 

, NEG }

(21) Pol-negation: informal register

{/n't/, 

, NEG }

The distinction between the contracted and the full form is thus reducible to a change in the size of certain lexical items in the lexicon. The item that undergoes change in this case is *not*: it reduces in size to being merely a Foc^{Neg}-marker. Whereas it spells out N4, N3, N2 and N1 in formal English, it spells out only N3, N2 and N1 in the informal register. My analysis thus implies that the English morpheme *not* has become structurally more reduced compared to a previous stage. As a consequence a new negative marker is necessary to spellout the layer N4P. This negative marker is the phonologically reduced form of the shrunken Pol^{Neg}-marker: its spellout is *n't*. The highest layer of the negative spine is now spelled out by another another morpheme, *n't*, which can still override the other negative markers. The phonologically reduced state of *n't* reflects the shrunken state of *not* as a Pol^{Neg}-marker.

In the next section I make explicit how the derivation works first for the formal Pol^{Neg}-marker *not* and then for informal *n't*.

7.2.5.2 Pol-negation: *not*

For sentences like (22a) which contain a gradable adjectival predicate, the negative features undergo all previously sketched Agree-steps. [iQ:_] on Q^0 probes and gets

valued by [uQ:Neg], [iDeg:_] probes and Agrees with [uDeg:Neg], [iFoc_] probes and Agrees with [uFoc:Neg]. Since there is an EPP on Foc^0 in English, the entire negative spine is attracted to SpecFocP.

When Pol^0 is merged, [iPol:_] on Pol^0 probes and finds [uPol:Neg] and gets valued as negative via Agree.[11] Given that there is no EPP-feature on Pol^0 the negative marker surfaces in SpecFocP, below tense, at PF. However, at LF the highest position, PolP, is interpreted, explaining why there is SNP, i.e. why the sentence has a positive question tag. I come back to this issue in more detail in chapter 8.[12]

(22) a. She is not happy, is she?
b. She is NOT happy (but sad), isn't she?

[11] In spite of the fact that the negative spine has moved to SpecFocP, it can still undergo Agree with a Pol-probe at the edge of the left periphery. This is standard in Minimalism, but within cartography this might seem a violation of Criterial Freezing (Rizzi 2006). However, I believe this is not the case. Criterial Freezing can be defined as in (ia) and a Criterion as in (ib).

(i) a. A phrase meeting a criterion is frozen in place. (Rizzi 2006)
b. XP_F and X_F must be in a Spec-head configuration, for F = Q, Top, Foc, R, … (Rizzi 2006)

Rizzi (2006) also stipulates (ii).

(ii) A Criterion is fulfilled by last merge.

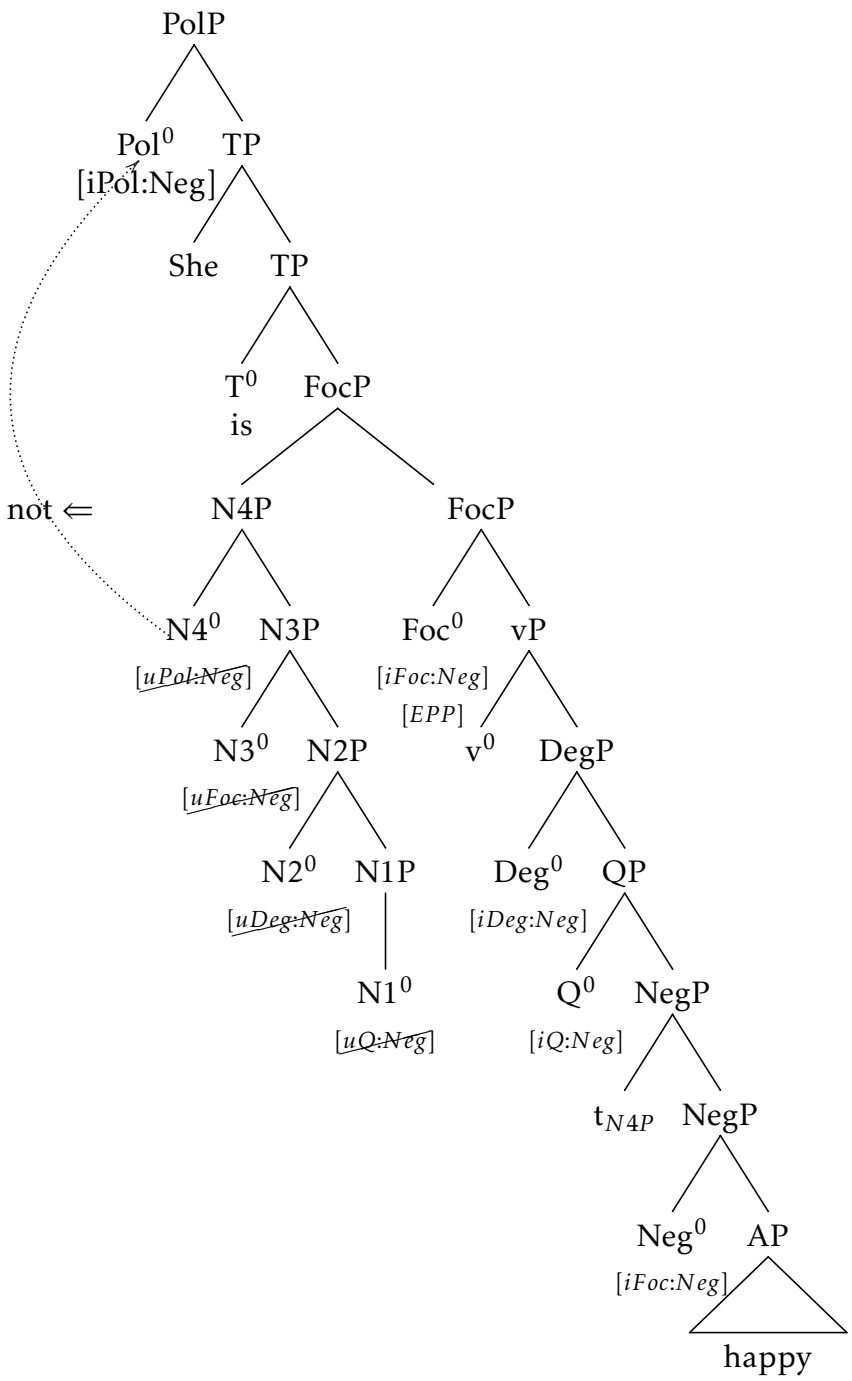
Consequently, a phrase XP moves from its S-selected position (i.e. the position in which it is merged) to its Criterial Position in the left periphery either in one fell swoop or via intermediate landing sites, also called successive cyclic movement. Once XP has reached its criterion via movement, only sub-extraction out of the moved XP is said to be possible to satisfy another criterion. The present proposal does not violate Criterial Freezing for two reasons. First, when the four-layered spine surfaces at PF it has not yet reached its Criterion (Rizzi 2006) and 2) only one feature, i.e. a subpart from the entire phrase, Agrees with the Pol-probe. The underlying assumption here is that the Criterion of a negative spine is determined by its topmost feature, in this case Pol^0. When the spine has four layers, then Q^0, Deg^0 and Foc^0 are intermediate landing sites or checking positions for the negative spine before it reaches its Criterion in PolP at the edge of the left periphery. Evidence for the intermediate landing sites or checking positions comes from languages which have negative doubling or tripling, as for instance Italian (see Poletto (2008) and chapter 10).

[12] An argument against moving the negative marker to a position higher than TP in English could be data like (i) with an NPI in subject position.

(i) a. *Anyone did not see Lena.
b. Lena did not see anyone.

If negation outscopes TP at LF, one would expect that this NPI should be licensed. Under the present account these data are explained by claiming that NPIs can only be licensed when they are in the scope of a c-commanding overt negative marker at PF. (cf.Linebarger (1980), Giannakidou (1998)).

(23)

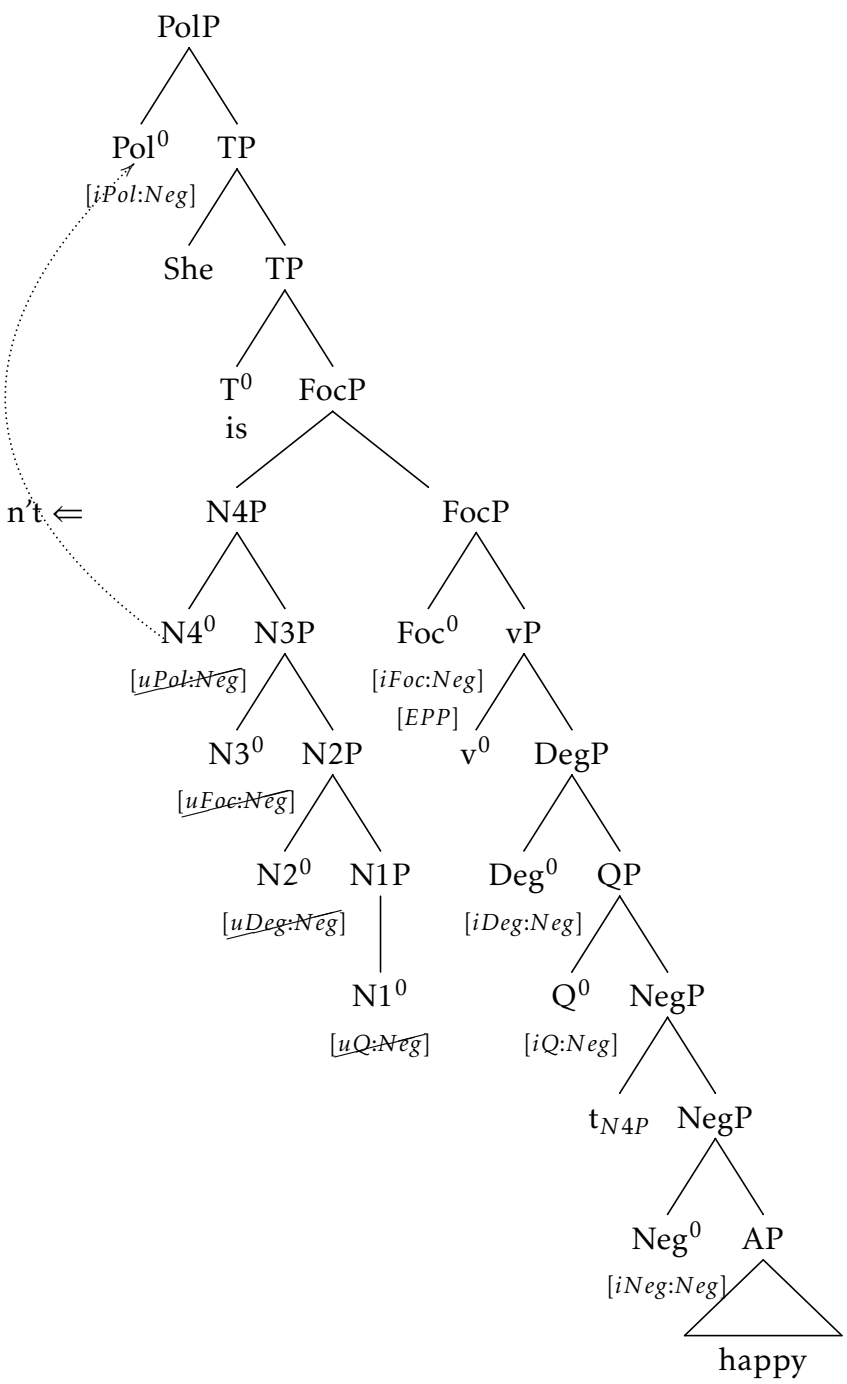


7.2.5.3 Pol-negation: *n't*

For a sentence like (24) with enclitic *n't*, almost the same derivation applies as in (23): the features on N4 Agree with the probing Pol^0. The spell out for the negative spine in SpecFocP is *n't*.

(24) John isn't happy, is he?

(25)



Given that the spell-out of the lexical item is phonologically weakened, the new negative marker needs a head to cliticize onto at PF. It is important to note that the cause of the phonological contraction is not situated at PF as such, but lies in a structural change in the lexicon: whereas the full form *not* used to spell out Pol- and Foc-negation, its coverage has shrunk in informal English and Pol-negation is now spelled out by a phonologically weaker negative marker *n't*[13]

[13]In the context of subject auxiliary inversion in English I assume that the phonologically reduced Pol-marker *n't*, and thus the negative spine, overtly moves to SpecPolP instead of taking only scope in SpecPolP in order not to end up without its host at PF.

7.3 Conclusion

In this chapter I illustrated how the different scope types of negation can be derived. I made use of minimalist tools to make the feature composition both in the negative spine and in the clausal spine explicit. The entire system relies on the fact that feature checking is valuation driven and that uninterpretable valued features can be deleted without checking.

Part IV

Support and Extensions

8

Intervention effects

In this chapter I discuss a set of data which show intervention effects between focus and negation and which find a natural analysis under the present account.[1] Assuming that question tags are sensitive to the value of the PolP in their antecedent I argue on the basis of a set of data 1) that focussed constituents can intervene on the path of a Pol^{Neg}-marker and trigger default affirmative valuation of Pol, 2) that focus is an intervener (Starke 2001, Rizzi 2004b, Endo 2007, Haegeman 2012) and that this follows from the featural make-up of the negative spine, 3) that when negation has widest scope, it takes scope in PolP even when it does not surface there and 4) that the interaction between root necessity modals and negation can also be captured in terms of intervention.

I first discuss the core data of this chapter in 8.1. In 8.2 I discuss question tags and the notion of intervention. Then I present the analysis. The final section extends the analysis to modal verbs.

8.1 The data

The set of data I start from is the pair in (1). When *n't* precedes *often*, (1a), the (reversal) question tags are positive, indicating the sentence is negative (Neg-S). When *often* precedes sentential *n't*, as in (1b), the (reversal) question tags have to be negative,

[1]Many thanks to Rachel Nye, William Harwood and Eric Lander for help with the data. All errors are of course mine.

indicating that the sentence is affirmative (Aff-S).[2]

(1) a. John doesn't often pay taxes, does he/*doesn't he? (Neg-S)
b. John often doesn't pay taxes, *does he/ doesn't he? (Aff-S) (Payne 1985:200; also cited in Penka 2011:5)

When *often* is preposed only negative reversal tags are allowed.

(2) Often John doesn't pay taxes, *does he/ doesn't he? (Aff-S)

The same interaction with QTs can be observed with the adverb *rarely*[3]:

(3) a. John doesn't rarely pay his taxes, does he/ *doesn't he? (Neg-S)
b. John rarely doesn't pay his taxes, *does he/ doesn't he? (Aff-S)

Penka (2011:5) argues on the basis of these data that 1) the QT-test is not a reliable test for sentence negation as such and 2) that the test is sensitive to the widest operator rather than to sentential negation. I disagree with the first part of Penka's claim: the REV QT-test is a reliable test when one knows what it tests. It tests sentential negative polarity (SNP) and the QTs are sensitive to PolP. With respect to the second claim, the QTs are indeed sensitive to other operators in the sense that these operators can intervene in the Agree relation between Pol and the negative scope marker in the nanospine. In a nutshell, with respect to the data in (3) the Agree relation between the Pol-probe and the Pol^{Neg}-marker in SpecFocP cannot take place due to intervention from a Q-adverb. Before I analyze the data in detail, I discuss two prerequisites in the next section: question tags and intervention.

[2]Some speakers have difficulties tagging sentences that have a frequency adverb preceding the tensed auxiliary. This is possibly related to the fact that for some speakers the emphasis that comes with having an adverb in an unusual position is not compatible with questioning that same sentence by means of a QT. Moreover, some speakers allow both positive questions tags and negative question tags when *often* precedes the auxiliary. I suggest that this is due to the fact that some informants also mentioned the possibility of having reduplicative tags. Since there are no neg-neg reduplicative tags (Quirk et al. 1985:813), it follows that when speakers allow for both types of QTs, the sentence must be affirmative (see De Clercq (2011), Brasoveanu et al. (2013) for discussion of the two types of question tags).

[3]Given that the polarity of REV QTs with the downward entailing Q-adverb *rarely* shifts from speaker to speaker in the absence of negation (Brasoveanu et al. 2013), I expect the data in (3) only to be valid for speakers who also have negative REV QTs for a sentence like:

(i) John rarely pays his taxes, doesn't he? (Aff-S)

Speakers who have positive REV QTs for such a sentence will most probably also have positive REV QTs when *rarely* precedes the tensed auxiliary. More quantitative research is necessary however to validate this hypothesis.

8.2 Prerequisites

8.2.1 Question Tags

Klima (1964) was the first to introduce question tags (QTs) as a diagnostic to detect the scope of negation in a main clause.[4]

QTs come in different guises. Sailor (2009) distinguishes invariant tag-questions, as in (4a), from dependent tag-questions, as in (4b). It is the latter type that interests me here. Dependent tags (DTs) typically consist of an auxiliary and a subject pronoun, which are based on the auxiliary and subject in the antecedent, i.e. the material in the TP of the antecedent clause.

(4) a. Sally can't come because she's busy cleaning her dungeon, right? (Sailor 2009:9)
b. Your son isn't typically allowed to relieve himself in the dining room, is he?(Sailor 2009)

The dependency of DTs is not only a matter of a (near)[5] isomorphism between the auxiliary and subject of the tag, but is also based on the polarity of the antecedent: the polarity of the tag depends on the polarity of the antecedent. The most well-known kind of DT-question is the reverse polarity tag or question tag (REV-QT). A prototypical negative sentence containing the negative marker *not* gives rise to a positive tag and a prototypical affirmative sentence will give rise to a negative tag, as in (5a) and

[4]QTs are considered Main Clause Phenomena (MCP) (Hooper and Thompson 1973). Like all MCP, Hooper and Thompson (1973) point out that tags can also be formed on certain kinds of embedded complements, i.e. the complements of nonfactive verbs like *think*, *believe*, *suppose*, *guess*, … and semifactives like *realize*, *find out*, …, (ib).

(i) a. I suppose falling off the stage was quite embarrassing, wasn't it?
b. I see that Harry drank all the beer, didn't he?

According to Hooper and Thompson (1973) these semifactive and nonfactive predicates are not assertions themselves, therefore the QT can attach to the main assertion which is in these cases expressed by the complement.

[5]There is considerable syntactic isomorphism between the auxiliary and subject, i.e. the TP, of the antecedent and the tag. However, this isomorphism is not complete(Sailor 2009), as illustrated by the examples in (i)-(ic).

(i) a. Nothing$_i$ was broken, was $^{\%}$it$_i$ / there? (McCawley 1998:506)
b. IBM$_i$ doesn 't make that model anymore, do / *does they$_i$? (McCawley 1998:503)
c. You had better leave now, hadn't/ shouldn't you? (McCawley 1998:506)

In (i)-(ib) there is no syntactic (i.e. featural) isomorphism between the pronoun in the tag and the subject of the antecedent and in (ic) the modal in the tag can differ from the modal in the antecedent (which is often the case between an antecedent and the clause which has undergone ellipsis.

(5b).

(5) a. John didn't buy the book, did/*didn't he? (Aff-S)
b. John bought the book, *did/didn't he? (Neg-S)

According toRomero and Han (2002) REV-QTs make the same contribution to the sentence as what they call 'preposed negation questions' do, i.e. they contribute a positive epistemic implicature.[6]

(6) Doesn't John drink? (Romero and Han 2002:204)

More concretely, both preposed negation questions and REV QTs express that the speaker has a belief p and that the speaker wants this belief to be confirmed. In order to get his belief confirmed the speaker questions it by preposed negation or by means of a REV-QTs. We can thus conclude that REV QTs are used by the speaker to ask confirmation for a proposition that he posits as his own (Cattell 1973, McCawley 1998).

A second - less common-type- of tag-question is the reduplicative (Quirk et al. 1985:812) or same polarity (Swan 2005) tag (henceforth RED-QT), illustrated in (7a). RED QTs are only used with affirmative sentences. It is generally assumed that there are no negative reduplicative tags, as illustrated by (7b) (McCawley 1998, Quirk et al. 1985, Swan 2005).

(7) a. John bought the book, did/*didn't he?
b. John didn't buy the book, *did/*didn't he?

RED-QTs are used when the speaker challenges or questions a proposition which he feels belongs to the interlocutor (Cattell 1973, McCawley 1998). [7]

The two kinds of tags can be kept separate by means of a test which - following Quirk et al. (1985:810-813) I label the *Oh so*-test. Sentences with RED-tags can be preceded by *Oh so*, signaling the speaker's sarcastic suspicion typical of RED-tags, whereas this is not possible for REV-tags. REV-tags merely check for information. For the rest of this chapter I focus on REV-QTs and not on RED-QTs.

As far as the derivation of QTs is concerned, I assume that they are derived in the same way as main clauses that have undergone VP-ellipsis (see Sailor 2009, 2011,

[6]Non-negative preposed questions on the other hand do not necessarily give rise to this implicature.

(i) Does John not drink? (Romero and Han 2002:204)

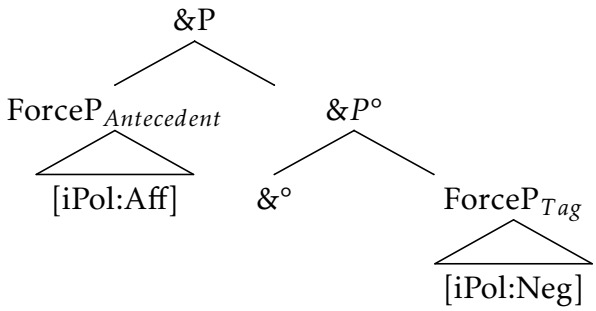
The sentence in (i) can also be used to simply ask for information.

[7]The two kinds of tags also come with different intonation contours, but this issue is beyond the scope of this dissertation. For a discussion of intonation patterns and scope I refer the reader to Ladd (1980) and Quirk et al. (1985:810-814).

Barros and van Craenenbroeck 2013).[8]

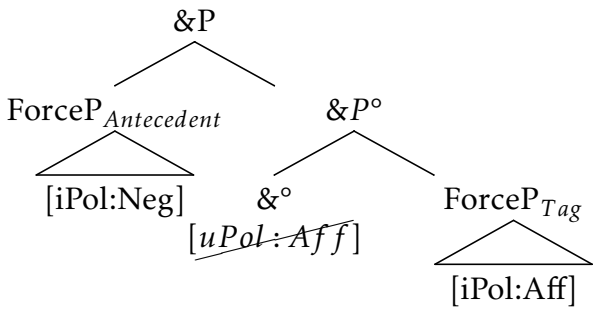
I propose that the tag and the antecedent are independent clauses (Culicover 1992, McCawley 1998, Sailor 2009) which are syntactically related by means of a silent co-ordination (cf. Sailor (2009) for a similar suggestion), illustrated in (8).

(8)



At a descriptive level, we can say that when [iPol:_] on Pol° in the antecedent gets a negative value [iPol:Neg], then [iPol:_] in the tag will need to get a positive value for REV-tags and vice versa. Furthermore, I will hypothesize that there is a Pol-probe on &° which has an unvalued polarity feature, [uPol:_]. Evidence for this comes from co-ordinators which wear negativity on their sleeve, in the form of an overt negative marker. For instance the Hungarian coordinator *ha-nem* 'but' contains the negative marker *nem*. This uninterpretable probe differs from the sentential probe Pol in that it is not a scope position for negative markers: it merely serves as a connector, mediating polarity information from a complement to its specifier. For positive REV QTs I suggest that the probe on &° gets a positive value and has its uninterpretable feature checked via Agree with the features on Pol^0 in its complement (the tag). The antecedent in Spec&P will need to get the opposite value and be negative in the case of REV QTS, (9).

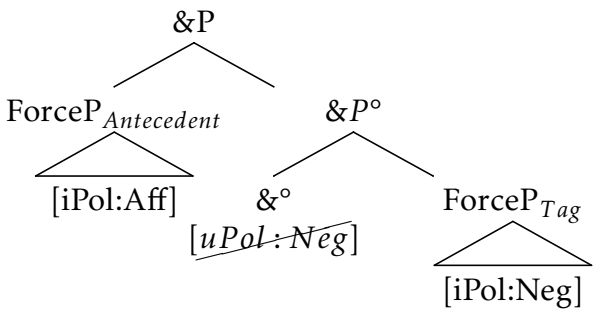
(9)



When the probe on &^{0} is valued negative due to negative tags, the antecedent will be affirmative, as illustrated in (10).

[8]Sailor's approach goes against mono-clausal and tag-specific approaches as proposed by Klima (1964) and Den Dikken (1995). I will not consider these approaches here, since I believe Sailor (2009, 2011)'s typological investigation of the correlation between the existence of DTs and VP-ellipsis in a language offers convincing support to adopt a VP-ellipsis approach and hence a bi-clausal approach to tags.

(10)



As this point my assumptions suffice for the purpose at hand, I have nothing to say at this point concerning the question why the Spec of an affirmative &P needs to be filled with a negative phrase and vice versa.

8.2.2 Intervention

In this section I explain 1) what intervention is and 2) why Q-adverbs can intervene with negation.

The concept of 'Intervention' is one that is closely related to the assumption that syntactic relations are governed by locality relations, i.e. in Rizzi (1990) intervention was interpreted as a source of locality effects on movement, with the formalization in (11):

(11) Relativized Minimality (first version): in the configuration
… X … Z … Y …
X and Y cannot be connected by movement (or other local relations) if Z intervenes between them, and Z is of the same structural type as X. (Rizzi 2013:172)

The idea is that movement relations as well as other relations are subject to the requirement that they be satisfied in the smallest (most minimal) possible configuration. When a constituent intervenes in the sense of (11), this will give rise to a violation of Relativized Minimality (Rizzi 1990).

Crucial in the configuration in (11) is the concept of 'of the same structural type', i.e. for Y to intervene in the relation between X and Z, Y has to be of the same structural type. In the original formulation (Rizzi 1990) 'same structural type' essentially referred to 1) head movement vs XP movement, and 2) A movement vs. A'-movement. As shown in later work (see Rizzi (2013) for a survey) a more refined system is required. Under Starke's (2001) reformulation of intervention, (12), the reason why elements intervene is that they belong to the same feature class.

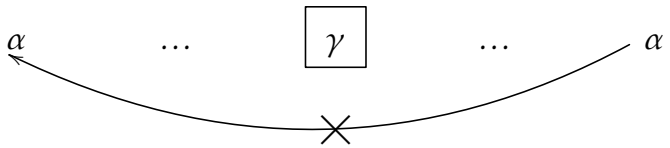
(12) X-relating two occurrences of α is legal only if $\alpha \in$ X and there is no γ, $\gamma \in$ X and γ intervenes between the two occurrences of α. (Starke 2001:7)

For similar ideas see also Rizzi (2004a).[9] Schematized, intervention can be depicted as

[9] See also Beck (1996, 2006), Endo (2007), Haegeman and Lohndal (2010), Haegeman (2012) for other

in (14).

(13)

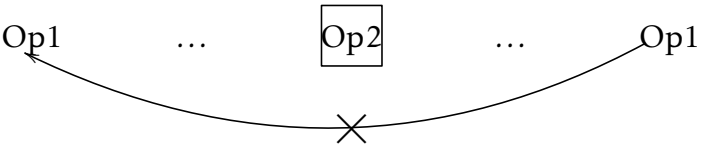


Starke (2001) and Rizzi (2004a) propose that focussed constituents, negation, wh-items and quantificational adverbs belong to the same feature class and hence can intervene with each other. Starke refers to this feature class with the feature [+Q]. To avoid confusion with quantification I will instead use Haegeman (2012)'s abbreviation, [+Op], for operator .

If we now turn to the encoding of sentential negation or what I call sentential negative polarity (SNP), then the fact that negation and quantification are part of the same feature class leads to the prediction that Q-adverbs are intervenors for the encoding of (SNP), because Q-adverbs belong to the same feature class as negation. This prediction is born out as shown in the data in section 8.1.[10]

In terms of my account we could thus say that Pol^0, endowed with [+Op], cannot Agree with Pol-features on the negative spine due to intervention from an [+Op]-marked constituent (Q-adverb). Put differently, the negative spine ($+Op_1$) will be trapped in a $+Op_2$-island. However, while in other cases discussed in the literature it is usually the case that intervention leads to ungrammaticality, this is not the case when it blocks the Agree relation between Pol and the negative spine. Rather the blocking of the Agree relation leads to default affirmative valuation of the Pol^0-probe.

(14)



Summarizing, the effect of the adverbs *often/rarely* on the polarity of the clause which have been pointed out in the literature and were discussed in section 8.1 can be explained in terms of intervention effects on Agree. Q-adverbs are endowed with [+Op] and belong to the same feature class as negation and polarity. Consequently, they intervene in the Agree relation between the Pol-probe and the negative spine.

In the following section I pin down the precise feature which causes intervention

intervention accounts and discussion of feature classes.

[10] Along the same lines Steixner (2012) showed that the negative concord relation between two negative indefinites in Bavarian can be interrupted by an intervening Q-adverb leading to a double negation interpretation of the indefinites. Also Haegeman and Lohndal (2010) show that negative concord in Flemish can result in double negation due to intervention from Q-adverbs. These data point in the same direction as the data presented in this chapter: there can be intervention in the relation between a high position and a low position for negation, but this does not lead to ungrammaticality. The low negative item can still get licensed. Under the present proposal the licensing of low negative constituents is not surprising, given the proposal for a low predicate NegP.

with negation in the case of Q-adverbs. Furthermore, I provide detailed derivations for the data in 8.1.

8.3 Analysis

In this section I first argue that the feature on Q-adverbs which is responsible for intervention is [uFoc:Q]. Second, I present an analysis in terms of focus intervention.

8.3.1 The feature composition of Q-adverbs

In line with Cinque (1999:91)'s proposal I propose that there are two positions for frequency adverbs: one below low FocP, possibly AspFreqII[11], which is used in (15), and another position in between PolP and TP which is possibly compatible with Cinque's AspFreqIP and which is filled in sentences like (16).

(15) a. John doesn't often pay taxes, does he/*doesn't he? (Neg-S)
b. John doesn't rarely pay his taxes, does he/ *doesn't he? (Neg-S)

(16) a. John often doesn't pay taxes, *does he/ doesn't he? (Aff-S)
b. John rarely doesn't pay taxes, *does he/ doesn't he? (Aff-S)

I assume that only Q-adverbs in AspFreqPI are endowed with an uninterpretable focus feature that is valued for quantification, i.e. [uFoc:Q]. Frequency adverbs in AspFreqII on the other hand are not quantificational and therefore they lack the specific feature specification [uFoc:Q]. The fact that there is no intervention between the Foc-probe and the low negative spine in sentences like (15) can be explained due to this difference in feature specification.[12]

[11] Cinque (1999) assumes that adverbs are base-generated in the specifier of functional projections in the IP-domain. The cartography of adverbs that he proposes is in (i).

(i) [*frankly* Mood_{SpAct} [*fortunately* Mood_{Eval} [*allegedly* Mood_{Evid} [*probably* Mood_{Epist} [*once* $\text{T}_{(Past)}$ [*then* $\text{T}_{(Future)}$ [*perhaps* $\text{Mood}_{Irrealis}$ [*necessarily* $\text{Mood}_{Necessity}$ [*possibily* $\text{Mod}_{Possibility}$ [*usually* $\text{Asp}_{Habitual}$ [*again* $\text{Asp}_{Repetitive(I)}$ [*often* $\text{Asp}_{Frequentative(I)}$ [*intentionally* $\text{Mod}_{Volitional}$ [*quickly* $\text{Asp}_{Celerative(I)}$ [*already* $\text{T}_{(anterior)}$ [*no longer* $\text{Asp}_{(terminative)}$ [*still* $\text{Asp}_{Continuative}$ [*always* $\text{Asp}_{Perfect}$ [*just* $\text{Asp}_{Retrospective}$ [*soon* $\text{Asp}_{Proximative}$ [*briefly* $\text{Asp}_{Durative}$ [*characteristerically* $\text{Asp}_{Generic/Progressive}$ [*almost* $\text{Asp}_{Prospective}$ [*completely* $\text{Asp}_{SgCompletive(I)}$ [*tutto* $\text{Asp}_{PlCompletive}$ [*well* Voice [*fast/early* $\text{Asp}_{Celerative(II)}$ [*again* $\text{Asp}_{Repetitive(II)}$ [*often* $\text{Asp}_{Frequentative(II)}$ [*completely* $\text{Asp}_{SgCompletive(II)}$

[12] Another possibility would be to claim that the feature composition of both Q-adverbs is exactly the same, but that for sentences like (15) the NegP is basegenerated on *often/rarely* and that therefore intervention does not take place. However, this would not explain the different readings in (17).

Nevertheless, it is beyond the scope of this dissertation to have a fine-grained look at the structure of Q-adverbs to distinguish their feature composition and consequently understand their different po-

The reason why Cinque (1999) assumed two different positions for frequency adverbs is precisely because of the difference in quantificational properties. Cinque (1999:26-27) discusses the contrast in (17). Whereas frequency adverbs like *often* which precede the tensed verb can unselectively bind a bare DP subject in (17a), resulting in the reading that 'most Texans drink beer', this reading is not available for frequency adverbs which follow the tensed verb, as in (17b). They can only mean that beer drinking happens frequently.

(17) a. Texans often drink beer.
b. Texans drink beer often.

The same contrast applies to the sentences under consideration in this chapter. When I insert a bare subject instead of the definite DP *John*, (18a) yields the reading that 'many texans don't pay taxes'. This reading is not available for (18b).[13]

(18) a. Texans often don't pay taxes.
b. Texans don't often pay taxes.

Based on the contrast in (17) I take it that frequency adverbs in AspFreqI are (or can be) valued for quantification, whereas the frequency adverbs in AspFreqII are not.[14] Apart from the quantificational properties of frequency adverbs in this position, I also propose that Q-adverbs in this position are focus-marked: they carry an uninterpretable focus feature which allows them to take scope.

sitions in the clause and the different readings they give rise to. Given the fact that Q-adverbs can give rise to the well-known cardinal, absolute proportional (Partee 1987) and relative proportional readings (Cohen 2001, 2003), it is probable that also their inner structure is complex in a way similar to negation. Cross-linguistic research is necessary to get insight into whether these different readings can be morphologically distinguished in other languages and which features these readings correspond to.

[13]Compared to the examples in (17), low *often* does not end up clause finally in negative sentences due to the fact that V does not raise to T.

[14]Another piece of support, which points to a difference in the feature composition of low and high frequency adverbs, could come from the contrast between the data in (i)(I want to thank Liliane Haegeman for providing me with these data and Eric Lander for his native speaker judgments.) If the high *often* and the low *often* would be featurally similar, then we would expect that for both sentences in (i) *how* would equally well be interpreted with *say* (high construal) as with *fix* (low construal). However, this is not the case. Even though both both high and low construal are possible for both sentences, low construal is preferred with low *often* and high construal is preferred with high *often*. This confirms that high and low *often* are featurally different.

(i) a. How did you say that John often has been able to fix the car?
b. How did you say that John has often been able to fix the car?

From the perspective of Herburger (2000), this proposal is not surprising: focus namely structures unrestricted quantification.[15] In what follows I provide support for the claim that frequency adverbs in AspFreqI are not only valued for quantification, but also uninterpretable for focus.

First, informants claim that the word order in (19a) is more neutral, whereas the word order in (19b) with the Q-adverb in between the subject and the tensed verb is emphatic.

(19) a. John didn't often pay taxes.
b. John often didn't pay taxes.

Moreover, Quirk et al. (1985:549) observes that Q-adverbs which are preposed can give rise to the same reading with bare DP subjects as the Q-adverbs which occur in between the subject and the tensed auxiliary, as illustrated in (20). This reading in (20d) is absent for frequency adverbs which follow the tensed verb, as in (21).

(20) a. Often students play squash.
b. Students often play squash
c. = It often happens that students play squash.
d. = Many students play squash.

(21) a. Students play squash often.
b. = Students play squash on many occasions.
c. ≠ Many students play quash.

In line with Rizzi (1997) who argues that the left peripheral focus position is quantificational and Haegeman (2000) who proposes that preposed negative constituents target the left peripheral FocP, I argue that the preposed Q-adverb in (20a) is in a left peripheral FocP. Given that the same readings can be induced by the preposed *often* and the *often* in between the subject and the tensed verb I propose this *often* is also focus-markerd.

In addition, when a typical focussing adverb like *only* (Horn 1969, Beck 2006) occurs in between the subject and the negated tensed verb, REV QTs are negative, indicating that the sentence is affirmative, (22). The behavior of a focussing particle like *only* and the behavior of Q-adverbs like *often* is thus similar with respect to REV-QTs.

(22) *John only didn't want to buy new shoes, did he/ didn't he? (Aff-S)

Summarizing, there are two base-generated positions for frequency adverbs like *rarely* and *often*. One position is AspFreqI and the other position is AspFreqII. Only fre-

[15] An objection to the proposal that Q-adverbs are focus marked might be that Q-adverbs do not necessarily carry focus accent — though they may —, which is often associated with focus-marked constituents (Schwarzschild 1999). I come back to this in the analysis.

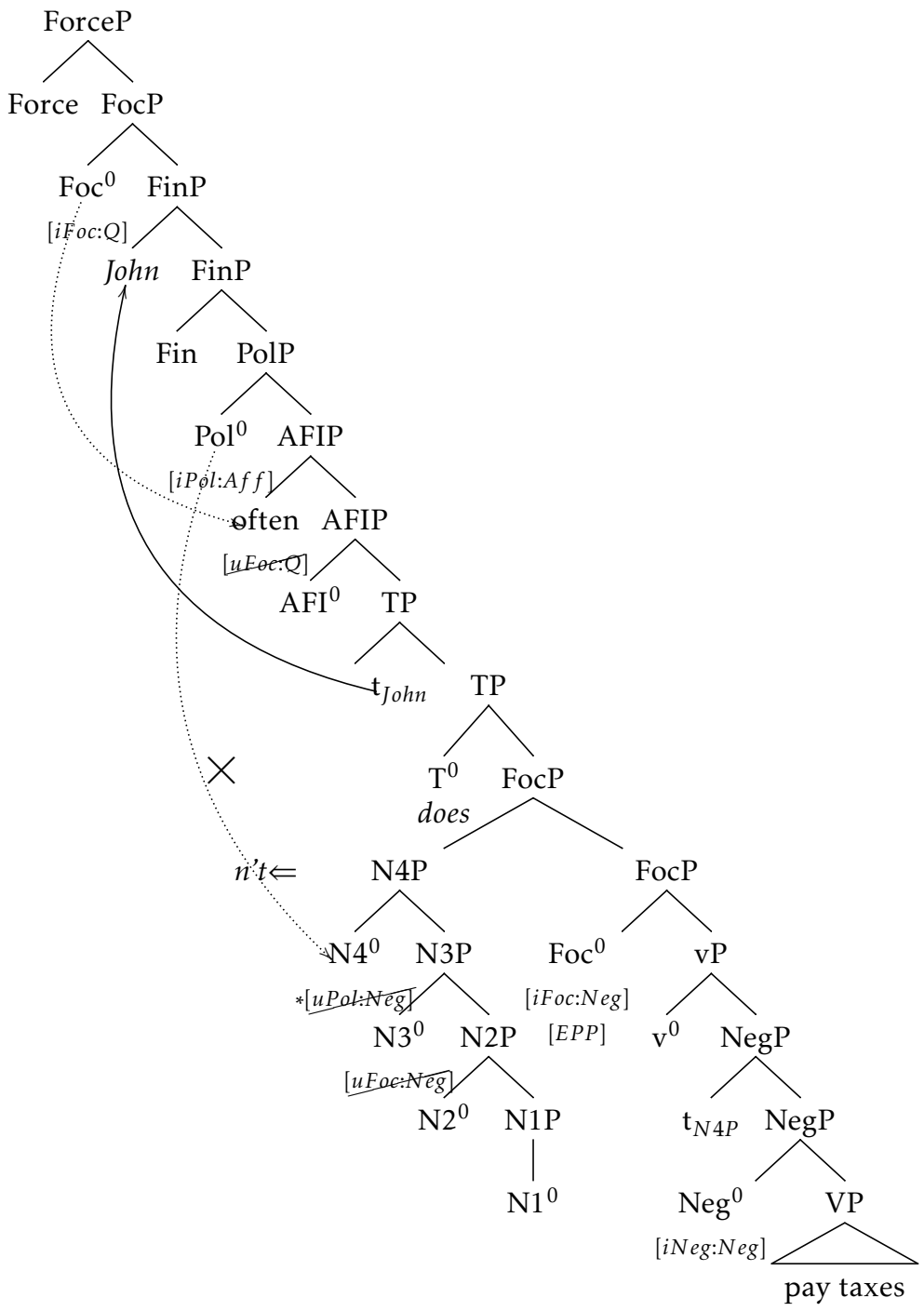
quency adverbs in AspFreqI are valued for quantification and marked for focus. In the next section I spell out the derivation for a negative sentence with a Q-adverb which in AspFreqI.

8.3.2 Focus intervention

For a sentence like (1b), repeated here as (23), I propose the structure in (24).

(23) John often doesn't pay taxes, *does he/ doesn't he?

(24)



For a sentence like (23) the negative spine consists of four layers in order to express Pol-negation. The negation used in (23) is contracted *n't*, which means we are dealing with an LI from the informal variety of English, cf. chapter 7 section 7.2.5. Given its phonologically reduced form it will cliticize to T^0 at PF. The feature [uFoc:Neg] on N3 has been checked against the Foc-probe and the spine has moved to SpecFocP due to an EPP on Foc^0.[16] Due to the fact that the Q-adverb with [uFoc:Q] intervenes between the Pol-probe [iPol:_] and the negative spine in low SpecFocP, Agree between the Pol-probe and the relevant features on N4 cannot take place. [iPol:_] gets a default affirmative valuation. The interpretable feature on N4 [uPol:Neg] gets deleted (Bošković 2009, 2011) before it is shipped off to the semantic component, but it has not been checked. However, the Pol-features on N4 has not been checked, hence Pol-negation does not arise. Absence of checking is indicated in the tree in (24) with a star *. Even though the spellout remains unaltered, the scope of negative marker is interpreted according to the position it last checked, which is low FocP. The subject moves to FinP (**?**Cardinaletti and Roberts 2002, Haegeman 2012).[17]. When the left peripheral Foc^0 is merged, the probe on Foc [iFoc:_] Agrees with the [uFoc:Q] on the Q-adverb. However, there is no movement to the left periphery in (23).

For a sentence like (1a), repeated here as (25), the same happens as for regular Pol-negation, because there is no intervention from the frequency adverb *often* in AspFreqII, a position below FocP. I refer the reader to the derivation in 7.2.5.

(25) John doesn't often pay taxes, does he/*doesn't he? (Neg-S)

For a sentence like (2), repeated here as (26), I propose that exactly the same happens as in (24), but then followed by movement to the left peripheral SpecFocP due to an EPP on Foc^0.

(26) Often John doesn't pay taxes, *does he/ doesn't he?

8.3.3 Conclusion

The Q-adverbs in interaction with the REV QTs support the general approach to negation presented in this dissertation: the fact that Q-adverbs with [uFoc:Q] can intervene in the Agree relation between the Pol-probe and the negative spine follows naturally from the proposal. Due to the fact that the negative spine itself consists of Foc- and Q- related negative scope features intervention effects with other Q- and focus related

[16] I assume that the features on the layers in N1 and N2 have been checked against an intermediate probe in a way comparable to what is described for Q- and Deg-negation in 7. I postpone discussion of how the proposal for negation in combination with adjectival predicates can be carried over to verbal predicates to chapter 10.

[17] The subject could also move to SubjecP, a position below FinP, which has been proposed by Haegeman (2002), Cardinaletti (2004), Rizzi and Shlonsky (2005, 2006)

elements can be explained.

Moreover, the QT data in interaction with the intervening Q-adverb provide evidence for a position for negation dominating TP, which I have labelled PolP, in which negation needs to take scope in order to give rise to SNP. Even though in English negation surfaces at PF in a position below TP (Laka 1990, 1994, Ouhalla 1991), the contrast between the QT data for a negative sentence with a frequency adverb following the negative marker, like (1a), and a sentence like (1b), with intervening Q-adverbs, shows that a position dominating TP is responsible for the expression of SNP. When nothing intervenes between the negative spine and the Pol-probe, then negation can take scope in its highest projection and give rise to SNP. However, when there is an intervenor, negation cannot take scope in PolP and the Pol-probe gets a default affirmative value.

In addition, the data show that QTs can be analyzed as being sensitive to a high position in syntax which is responsible for sentential polarity and which I label PolP.

8.4 Extending the proposal to modal verbs

In this section I want to look at a set of data which show the scopal interaction of negation with modal verbs.

I first and foremost present some well-known data of scope interactions between modals and negation on the one hand and then I look at how similar data have an effect on the choice of QTs. Second, I show how both the scope interaction of modals and negation and the QT data provide support for the claim made before, namely that the surface position of the Pol^{Neg}-marker is not necessarily the position in which negation can take its widest scope. Moreover, I show how the data suggest that only an account with featurally complex negative markers can capture the complexity of the interaction between negation and modals. Third, I propose an intervention account for root necessity modals. I hypothesize — in line with Iatridou and Zeijlstra (2009)'s claim that some root necessity modals are Positive Polarity Items — that these modals intervene due to the presence of an affirmative polarity feature.

8.4.1 The data

It is a well-known fact that negation outscopes modals expressing root possibility (existential modals), as shown in (27) and that negation scopes under root necessity modals, (28) (Palmer 1997, 2001, Cinque 1999, Butler 2003, Cormack and Smith 2002, Iatridou and Zeijlstra 2009, Iatridou and Sichel 2011, Breitbarth 2011, Temmerman 2012).

(27) John cannot leave. ¬ > Mod

a. *It is possible for John not to leave.
b. It is not possible for John to leave.

(28) John mustn't leave. Mod > ¬

a. It is required that John doesn't leave.
b. *It is not required that John leaves. (Examples fromIatridou and Zeijlstra (2009) with own paraphrase)

If we combine sentences containing modals and negation with REV QTs, then we get the expected result: the scope of negation is visible in the REV QTs. In combination with a root possibility modal, the REV QTs have to be positive, indicating that the sentence is negative, (29). This is the expected result: negation scopes over root possibility modals. When there is emphasis or focus on *not*, as in (29c), the tags can be negative, indicating that the sentence is affirmative.

(29) a. John couldn't buy the book, could he/ *couldn't he? (Neg-S)
b. John could not buy the book could he/ *couldn't he? (Neg-S)
c. John could NOT buy the book *could he/ couldn't he? (Neg-S)

With the root necessity modal *must* on the other hand, the REV QTs can be negative, indicating that the sentence is affirmative.[18]

(30) a. John mustn't buy the book, ?must he/?mustn't he? (Aff-S)
b. John must not buy the book, ?must/?mustn't he? (Aff-S)

If the approach taken to QTs is on the right track and QTs are indeed sensitive to a position, called PolP, dominating TP, then the position negation takes scope in in interaction with the root necessity modal *must* cannot be the same as in the interaction with root possibility modals. In spite of the fact that both in (29a) and (30a) negation cliticizes onto the modal verb, which suggest that a Pol^{Neg}-marker is involved, the marker does not give rise to SNP in (30a) judging by the QTs.

In the next section I propose how these data can be understood from the perspective of the present approach and I present problems for existing approaches to modality and negation.

[18]There is speaker variation with respect to these tags. Some speakers have positive QTs, but all speakers agree that it is hard to tag sentences with *mustn't* or *must not*. It is not clear to me at this point whether the speakers who have positive QTs use the RED QTs or REV QTs. Crucial for our purposes, there is a clear contrast in the judgments between the QTs for *couldn't* and the QTs for *mustn't*. Surprisingly, speakers are consistent in giving positive REV QTs for *shouldn't*, which is another root necessity modal. I do not have an explanation for why *shouldn't*, which scopes over negation, differs from *mustn't* in this respect. I postpone this to future research.

8.4.2 Intervention and root modal 'must'

In what follows I present two approaches to root modals, one by Cormack and Smith (2002) and one by Butler (2003).[19] I point out why neither of the approaches can capture the QT-data in their present state in spite of the fact that they have several positions for negation. Consequently, I propose that only a theory which has a featurally complex negative operator which allows it to be in at least two positions can account for the difference in QTs. In the final section I account for the interaction of the QT and modals in terms of intervention by drawing on an approach to modals byIatridou and Zeijlstra (2009).

Butler (2003) proposes that the scopal interaction between modals and negation follows from the cartography of modal auxiliaries. Even though the implementation differs, he assumes with Cinque (1999) that the various types of modals are base-generated in different positions with the following hierarchy (31):

(31) Epistemic necessity > epistemic possibility > root necessity > root possibility

Unlike Cinque (1999), though, the syntactic positions Butler adopts for the modals are not specialized for modals as such. For Butler root possibility modals are base-generated in a low clause-internal FinP and root necessity modals in a low ForceP. Negation is hosted by a low FocP in his account. The scopal differences discussed in (27) – (28) are now derived. For completeness sake I add that epistemic modals get a position in the left periphery of the CP-phase: epistemic necessity modals are generated in the left peripheral ForceP, negation in the left peripheral FocP — in line with proposals by Rizzi (1997) and Haegeman (2000) for negative inversion — and epistemic possibility modals in FinP. As such Butler derives the scopal differences notes for epistemic modals: negation generally scopes over possibility modals, (32a), but below necessity modals, (32b).

(32) a. The registrar can't have got my letter.
Scope: negation > epistemic possibility

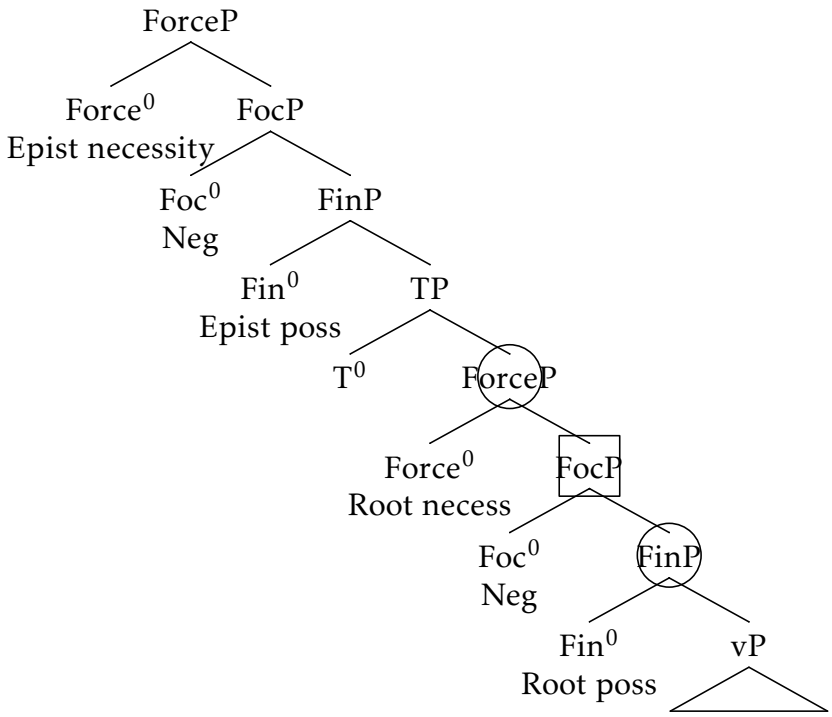
b. The registrar mustn't/mightn't have got my letter.
Scope: epistemic modality > negation (Butler 2003:984-985)

Butler (2003)'s different positions for root modals and negation are represented in (33). The base-generated positions for the modal verbs are circled and the position for

[19] It is impossible to do justice to the realm of proposals with respect to the interaction between modal verbs and negation and to the complexity of the different kinds of modal verbs in this dissertation. I refer the reader to Palmer (1997, 2001), Cinque (1999), Butler (2003), Cormack and Smith (2002), Iatridou and Zeijlstra (2009), Iatridou and Sichel (2011), Breitbarth (2011), Temmerman (2012) for more implementations.

modals are in a square box in the structure in (33):

(33)



However, there is a problem related to Butler's approach with respect to the QT-data for root modals. If the position for negation is the same for both types of root modals, i.e. low FocP, then the contrast in QTs with respect to root possibility modals and the root necessity modal *must* remains unexplained. Namely, in the same way as the intervention data with Q-adverbs *often* and *rarely* pointed to the fact that there must be a position above TP in which negation takes scope in the absence of intervening Q-adverbs, the QT data with modal *must* also point to the fact that negation takes scope in a higher position than its surface position in the absence of *must*. Consequently, low FocP cannot be the final scope position for negation in interaction with root possibility modals if one wants to explain the QT-tag data. A higher position is necessary. Butler could use high FocP as an extra scope position. However, it is unclear under his approach what the trigger would be for a negative marker to take scope in high FocP.

A problem along the same lines can be observed for the approach to modals proposed by Cormack and Smith (2002). They postulate that there are two positions for modals, Modal 1 and Modal 2. Modal 1 hosts root possibility modals and Modal 2 root necessity modals. They also postulate three positions for the encoding of negation in their syntax: echo[Neg], Pol[Neg] and Adv[Neg]. Pol[Neg] encodes sentence negation. The sequence of LF-interpretable heads they propose is as in (34):

(34) Echo[Neg] >C> T >(Adv1)> Modal1> Pol[Neg] >(Adv2)> Modal2/Aux > (Adv[Neg])> V

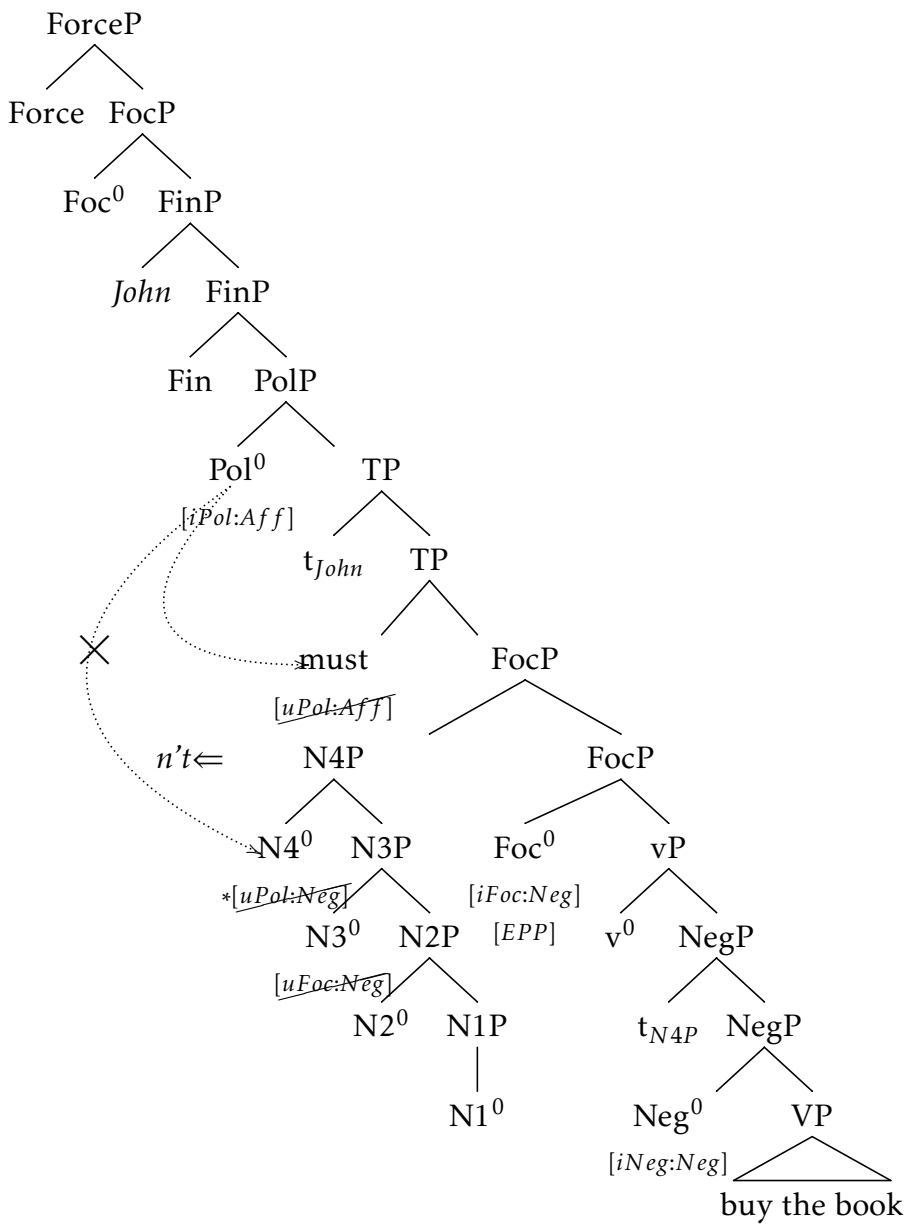
The same problem as in Butler (2003)'s account arises: if negation is in Pol[neg] both for the scope interactions with root possibility modals ánd root necessity modals, then it remains unexplained how the QTs — which we saw are sensitive to a high position for negation — can be different in the presence of the root necessity modal *must*.

From the perspective of the present proposal these data find an explanation in terms of intervention effects.[20] In a nutshell, I propose that modals are base-generated in T^0 and that root necessity modals like *must* come with a feature [uPol:Aff] which causes intervention between the Pol-probe and [uPol:Neg] on N4 in SpecFocP.[21] Consequently, the Pol^0-probe cannot Agree with the relevant features on the negative spine, resulting in [iPol:Aff] and thus in negative REV QTs. [uPol:Neg] on N4 in the nanospine gets deleted (Bošković 2009, 2011) without taking scope in PolP and without being checked (indicated with * in the tree). The spell-out of the Pol^{Neg}-marker is maintained and negation gets a low scope (Foc-)interpretation, which was the last scope position of negation which got checked. I illustrate the proposal for a sentence like (30a) in (35).

[20] Penka (2012) argues on the basis of cases of split negation that negative indefinites in negative concord languages do not need to be semantically licensed by negation. An intervening operator, like an intensional or modal verb, can apparently also license the negative indefinite, when it intervenes between semantic propositional negation and the semantically uninterpretable negative indefinite.

[21] I believe the approach I present here is compatible with approaches by Cinque (1999), Cormack and Smith (2002) or (Butler2003) who argue for different positions for modal verbs. However, within the present system, the need for these different positions — at least with respect to root modals — seems less crucial for the analysis. Since my concern is negation far more than modality I abstract way from this for now. However, from a nanosyntactic perspective it is plausible that modals merge in different positions.

(35)



Root possibility modals are not endowed with [uPol:Aff]. Therefore, the Pol^0-probe can Agree with the features on the negative spine in the regular way, cf. section 7.2.5, giving rise to SNP and thus to the positive QTs in (29a)–(29b).

With respect to (29c) I assume that the negative REV-QTs are a consequence of the fact that the nanospine does not consist of N4, but that only the features for Foc-negation are present.

The proposal to endow *must* with [uPol:Aff] is inspired by Iatridou and Zeijlstra (2009)'s account of root necessity modals (which they call universal deontic modals). They argue that root necessity modals are Positive Polarity Items (PPIs) (Ladusaw 1979, Ernst 2009). A similar claim was made by Israel (1996) and Homer (to appear). Iatridou and Zeijlstra (2009) argue - in line with Van der Wouden (1994) - that when a certain domain, in this case the domain of root necessity modals - already consists of one class of polarity items, namely negative polarity items, like the modals *have to* and

need to, then it is probable that the same domain also has the other class of polarity items, namely PPIs. I propose to implement their idea by assuming that *must* has a affirmative feature. I propose that the feature is uninterpretable, because the modal itself cannot determine the polarity of the clause. Only via the probe on Pol^0 can the polarity value of the modal influence the polarity of the sentence.[22]

8.5 Conclusion

In this chapter I provided support from REV QTs for the claim that sentential negation or sentential negative polarity is expressed in PolP, a position dominating TP. The fact that REV QTs are positive for regular negative sentences containing a Pol^{Neg}-marker, but negative when a Q-adverb or the root necessity modal *must* intervenes between the negative marker and PolP was interpreted in terms of intervention in the Agree relation between Pol^0 and the negative spine in SpecFocP. The data are hard to account for under an approach to negation which allows for only one position for negation.

[22]Under Iatridou and Zeijlstra (2009, to appear) root possibility modals are merged in T, in a position above negation, but root necessity modals are merged lower than IP and move to T. Due to their low base position, root necessity modals can reconstruct, unless when reconstruction leads to a PPI-violation. This is the case with *must* and *should* (Iatridou and Zeijlstra to appear): they are PPIs, thus reconstruction does not take place. Within the syntax of negation proposed here, there is no need to base-generate modals within VP, since negation is featurally complex and can thus move and take scope in several positions.

9

Bipartite negation in French

In this chapter I extend the nanosyntactic account for negation developed in this dissertation to explain a case of bipartite negation in what is referred to as *le bon usage* French (Grevisse and Goosse [1936] 1993, Rooryck 2010). The analysis captures the obligatory presence of *ne* and *pas* for the expression of sentence negation. The core issue I address is the fact that both *pas* and *ne* seem to convey negation and yet the fact that they are both present in a negative sentence does not lead to a double negation effect. One way of accounting for this would be to assume an asymmetric analysis according to which only one of these two elements is inherently negative, or in which only one of the two carries interpretable negative features. This is not what I will be doing: in my analysis I will assume that both *ne* and *pas* are negative scope markers which need to combine to convey a single expression of negation. Finally, the analysis proposed here also sheds light on how my account of negation can capture diachronic change, more in particular Jespersen's cycle (Jespersen 1917).

9.1 Introduction: Jespersen's cycle

In this section I introduce how French bipartite negation relates to a well-known grammaticalisation cycle, called Jespersen's cycle.

The usage of *ne … pas* in *le bon usage* French is also known as embracing negation or discontinuous negation.[1] It differs from modern spoken French in that *ne* is obligato-

[1] With the term *le bon usage* French I refer to the written form of French which reflects an earlier stage of French than present-day spoken French and in which *ne* and *pas* obligatorily co-occurred. Rooryck

rily present in *le bon usage* French to express sentence negation, as in (1a), but optional or lost in spoken modern French, illustrated in (1b).

(1) a. Je n' ai pas faim.
I ne have pas hunger
'I'm not hungry.'
b. J'ai pas faim
I'have neg hunger
'I'm not hungry.'

I use the term bipartite negation to refer to the co-occurrence of two negative markers which together express sentential negation. The term does not refer to the co-occurrence of a negative marker and one or more negative indefinites or negative polarity items, as in (2). These are instances of 'negative concord'. In the literature bipartite negation is often subsumed under negative concord.[2]

(2) Je ne veux PAS que PERSONNE vienne.
I ne want pas that personne come-SUBJ
'I don't want anyone to come.' (Kayne 1984:40)

In terms of diachrony the pattern displayed in *le bon usage* French can be situated as a well known development of the expression of sentential negation and referred to as Jespersen's cycle. *Le bon usage* French would have attained stage II of Jespersen's cycle. The term Jespersen's cycle was first used by Dahl (1979) to refer to the evolution described by Jespersen (1917:4):

> The history of negative expressions in various languages makes us witness the following curious fluctuation: the original negative adverb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in its turn may be felt as the negative proper and may then in course of time be subject to the same development as the original word.

The evolution of negative markers is often represented by means of three stages:

(3) a. Stage I: Preverbal expression of sentential negation.
b. Stage II: Discontinuous expression of sentential negation.
c. Stage III: Postverbal expression of sentential negation.
(De Swart 2010:114)

(2010) states that *le bon usage* French is a form of French which was spoken by the middle and upperclass around 1840 and 1960.

[2] A full-fledged account of the use of *rien*, *jamais*, *personne* in *le bon usage* French is beyond the scope of this dissertation. I refer the reader to the literature on French negation for a discussion of these items (Haegeman 1995, Rowlett 1998a, Déprez 1997, 2000, Rooryck 2010).

This is a simplification: it has been noted in the literature that there are often intermediate stages in which change is taking place. The transition from stage II to stage III involves periods in which the two stages are present at the same time (Zeijlstra 2004, Breitbarth and Haegeman 2010:56). This is also true for French. In modern spoken French — even though *ne* is not obligatory anymore, the marker has not yet disappeared. Moreover, Rowlett (1998a) reports that in 17th century French sentential negation could be expressed either by *ne …pas* but it was also still possible to express sentential negation by means of *ne* alone. Similarly, the transition from stage III to stage I can also involve an intermediate stage: for English for instance the clitic behavior of *not* has been explained as a step in the transition from being a postverbal negator to becoming a preverbal negator (Jespersen 1917).

Moreover, while the presence and distribution of negative markers across the three (or more) stages is uncontroversial, the analysis of the respective role of the two components is not. For instance, there is discussion as to whether stage II, with the bipartite negation, should be seen as symmetric or asymmetric (**?**:67). Under the symmetric approach, both elements are considered to have the same weight in the expression of sentential negation, i.e. both are negative markers. Under an asymmetric approach to stage II, 'the two elements present are not both at the same time related to the expression of negation' (Breitbarth and Haegeman 2010:68): rather one element is conceived of as a negative marker and the other is seen as, for instance, a negative polarity element that is licensed by the presence of the negative marker or it may also be viewed as a scope marker.

Under the account I develop for bipartite negation in French the negative markers in Stage II are conceived of as symmetric: each of them is equally necessary to express sentential negative scope. Modern spoken French then has transitioned into stage III with only a postverbal negative marker.

In the following sections I first discuss sentential negation in *le bon usage* French and modern French under a nanosyntactic approach to negation and then I discuss how the approach captures Jespersen's cycle.

9.2 French negation and Jespersen's cycle

I first explain how I derive bipartite *ne…pas* for *le bon usage* French. Then I discuss how I derive sentential negation in modern spoken French.

9.2.1 Le bon usage French

I propose that in *le bon usage* French both *ne* and *pas* are inherently negative, but that the lexical tree of *ne* has become very small and cannot override all layers in the negative spine anymore. It has thus become 'structurally deficient' — in line withCardi-

naletti and Starke (1999), Breitbarth (to appear) (cf. 7.2.5).

I derive the structure for a sentence like (4).

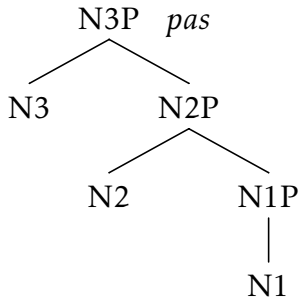
(4) Il n'est pas heureux.
he neg'is neg happy
He is not happy.

I propose that the lexicon of *le bon usage* French contains the following lexical items for negative markers.

(5) a. LI1 < /iN-/, [N1] , NEG>
b. LI2 < /non/ [N2 [N1]], NEG>
c. LI3 < /pas/ [N3[N2[N1]]], NEG>
d. LI4 < /ne/ [N4], NEG>

The negative spine which is inserted in SpecNegP is derived in the following way. N1 is merged and the lexicon is checked. There is an LI to spell out N1P, namely (5a). The lexical item *iN-* is inserted. N2 is merged and again the lexicon is checked. There is an LI, (5b) which matches the structure in syntax. *non* is inserted in N2P and overrides the spellout of N1P. N3 is merged and again the lexicon is checked. (5d) matches the syntactic structure: the structure is spelled out as *pas*, as shown in (6).

(6)



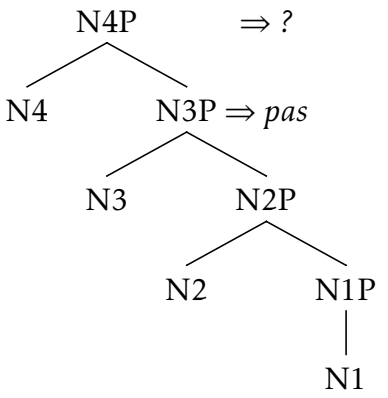
When the final negative layer N4 is merged, the lexicon is checked in the usual way. However, there is no lexical item in the lexicon which corresponds to (7). There is a lexical item which spells out N4 alone, but not one that consists of all negative features and N4.[3] So at this point there is no spellout for the structure in (7).

[3]I assume that it is due to the deficiency of *ne* that *ne* can also be used as an expletive negative marker in *le bon usage* French. Rowlett (1998a) mentions the following examples of expletive *ne*:

(i) a. Marie est plus grande que n' est son frère.
M. is more tall than ne is her brother
'M. is taller than her brother is.'

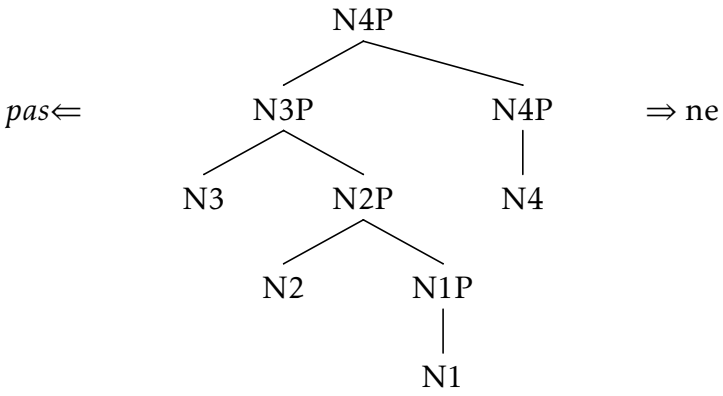
b. Elle a peur que tu ne sois là.
She has fear that you ne be-SUBJ there
'She's worried you might be there.'

(7)



As we saw in chapter 2 when merge does not lead to spellout, then the computation can have recourse to phrasal movement. Therefore, the complement of N4 moves to SpecN4P allowing the spell out of the newly merged feature. The resulting structure we get then is in (8). Upon consultation of the lexicon, it is clear that there is a LI which contains a syntactic tree which can spell out N4P. The feature is spelled out as *ne*.

(8)



The layers N1 and N2 of the negative spine undergo Agree with a Q- and Deg-probe in the clausal spine in the manner described in 8. When FocP is merged in a position dominating vP, Foc^0 probes and Agrees with [uFoc:Neg] on N3. [iFoc:_] gets valued with negative features and the uninterpretable features on [uFoc:Neg] are checked and are deleted.[4] The sub-spine containing N3P is extracted from its base-position and

c. Je doute qu' il ne soit là.
I doubt that he ne be-SUBJ there
'I doubt he's there.' (Rowlett 1998b:28)

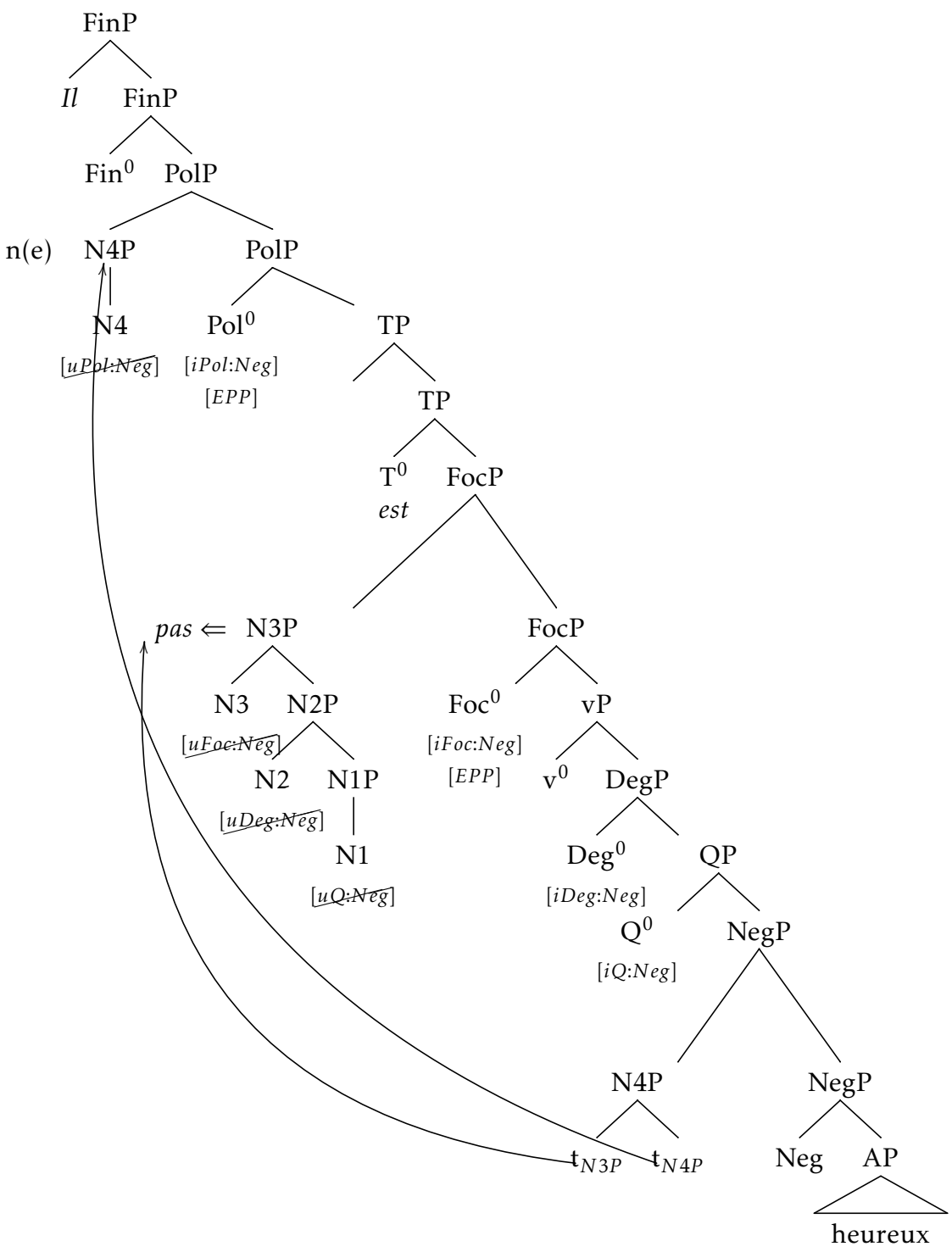
Since the LI for *ne* only consist of the feature N4 ([uPol:Neg], I propose it can be immediately merged in its scope position, PolP and spell out *ne*. Due to the fact that it is only syntactically valued for negation, but not semantically (since there is no NegP in the spine), the *ne* gives rise to expletive negation.

[4]Also Rowlett (1998b) proposes that *pas* starts out low. He proposes that it starts out as an adjunct to VP in modern spoken spoken French. It then needs to move to SpecNegP in order to give rise to sentential negation and to make *ne* negative via Dynamic Agreement. If it doesn't move to SpecNegP it expresses constituent negation.

moves to SpecFocP (due to the presence of an [EPP] feature on Foc^0).[5] Pol^0 is merged and has an [EPP] feature. The Pol-probe Agrees with the remnant of the negative spine in low NegP which corresponds to *ne* and which contains of [uPol:Neg]. Due to an [EPP] on Pol^0 the constituent spelling out *ne* gets attracted and moves to SpecPolP. As the subject precedes the negative particle *ne* it occupies a higher position. I assume that the subject moves to SpecFinP (Cardinaletti and Roberts 2002, Haegeman 2012).

[5]As already mentioned in chapters 6 and 7 the use of SpecFocP for negative scope markers makes predictions with respect to the information structural properties of negative clauses: it suggests that in negative clauses low FocP is not available for other constituents. However,Belletti (2008a,b) proposes that the subject of clefts in French moves to SpecFocP, in order to give rise to new information focus. As I explain in 10 I assume that in negative subject clefts the subject of the cleft remains within the embedded CP.

(9)



Summarizing, under the present approach two elements which express sentential negation together can both be considered negative and still need each other to express

sentential negation due to the fact that they form two parts of a negative spine which is in its integrity responsible for the expression of sentential negation. That the Pol^{Neg}-marker *ne* cannot express sentential negation on its own anymore is due to the fact that it has become structurally deficient: it spells out only a part of the negative spine.

9.2.2 Informal French

In present day spoken French *pas* has become the real sentence negator. The lexical tree for *pas* has grown in size. It has become a Pol^{Neg}-marker.

The evolution of *pas* is visible in the lexical items: *pas* spells out four layers now. As a consequence, *ne*, which is still part of the lexicon, becomes redundant and leaves the negative spine.

(10) a. LI1 < /iN-/ [N1] ,NEG>
b. LI2 < /non/ [N2 [N1]], NEG>
c. LI3 < /pas/ [N4 [N3[N2[N1]]], NEG>
d. LI4 < /ne/ [N4], X >

I discuss the derivation for a sentence like (11) to illustrate how *ne* becomes redundant. The derivation is in (12)

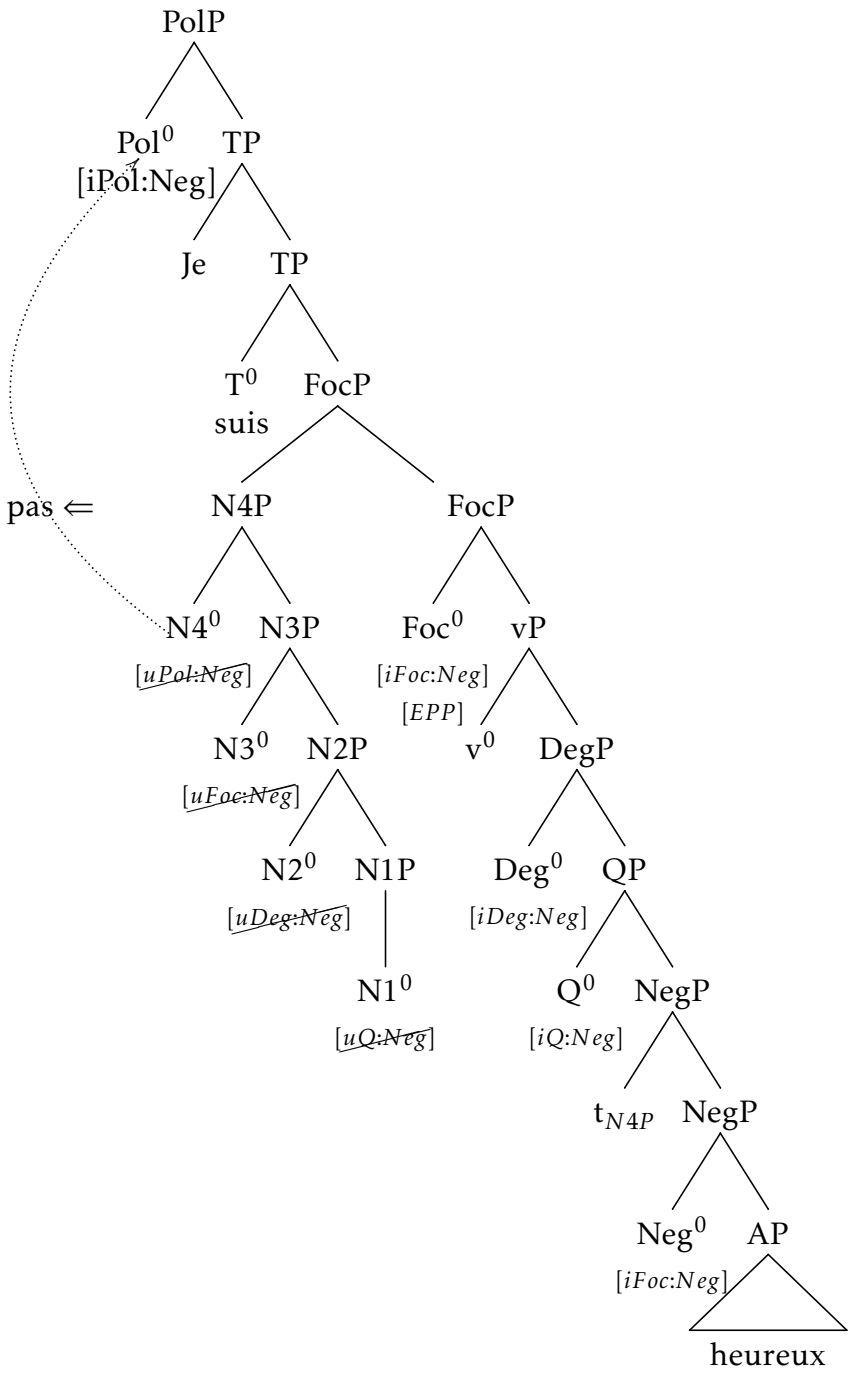
(11) Je suis pas heureux.

When the first layer of the negative spine is merged and the lexicon is checked, then *iN-* is spelled out, because there is an LI which corresponds to N1P, namely (10a). N2 is merged and again the lexicon is checked. There is an LI, (10b) which matches the structure in syntax. *Non* is inserted in N2P and overrides the spellout of N1P. N3 is merged and again the lexicon is checked. By the superset principle there is an LI, (10c), which matches the syntactic structure: the structure is spelled out as *pas*, as shown in (6). When the final negative layer N4 is merged, the lexicon is checked in the usual way. The same LI, (10c) matches with the syntactic structure and leads to spellout. As such, the lexical item for *ne*, (10d), which also consists of N4 becomes redundant. In order to spell out *ne* the computation would have to take recourse to phrasal movement. Given that a more economic option, namely no movement, is possible, the LI for *ne* is banned from the negative spine.

Once the Split NegP is fully merged and spelled out, the derivation proceeds. The layers N1 and N2 of the negative spine undergo Agree with a Q- and Deg-probe in the clausal spine in the manner described in 8. When FocP is merged in a position dominating vP, Foc^0 probes and Agrees with [uFoc:Neg] on N3. [iFoc:_] gets valued with negative features and the uninterpretable features on [uFoc:Neg] are checked and are deleted. The entire negative spine, corresponding to *pas* moves to SpecFocP (due to the presence of an [EPP] feature on Foc^0). Pol^0 is merged and has an [EPP] feature.

The Pol-probe Agrees with [uPol:Neg] on N4. There is no [EPP] feature on Pol^0 and the negative marker stays in SpecFocP.

(12)



Summarizing, due to the fact that the LI for *pas* has grown in size, the LI for *ne* becomes redundant and is no longer used for the spellout of the negative spine. As such, it loses its function in spoken French.

9.2.3 Jespersen's cycle

In this section I discuss briefly how the diachronic evolution of negative markers, known as Jespersen's cycle, is captured well by the structure of the lexical trees in the lexicon.

In *le bon usage* French which reflects stage II of Jespersen's cycle, the fact that two markers together express sentential negation is reflected in the lexicon. The LI for the old preverbal negative marker has become structurally deficient (Cardinaletti and Starke 1999, Breitbarth to appear): it spells out only one negative layer anymore, N4 which cannot override the other negative layers.[6]

However, since it is the only negative marker in the lexicon which can spell out N4, it still is inserted when syntax merges N4. As a consequence, both the Pol^{Neg}- and Foc^{Neg}-marker combine to spell out sentential negation.

Spoken French has entered stage III of Jespersen's cycle. The postverbal negative marker has become the new negative marker. This is reflected in the lexical items: the size of the lexical item *pas* has grown in size. It spells out all negative features, including N4. As a consequence, when N4 is merged in syntax, *pas* is inserted, because inserting *pas* does not require movement. *Ne* thus becomes redundant as a negative scope marker in the spine. The optionality of *ne* in spoken French could either be considered a consequence of a reanalysis of *ne* as a polarity marker, which can be inserted in SpecPolP without any connection to the negative spine, or it could be considered as a trace of the older stage of the language.

The two registers of English that we discussed in 6 reflects another part of the evolution of negative markers: it reflects the transition from stage III to stage I. The paradigm of LIs and the tree structures for formal English are very similar to the LIs and tree for spoken French: both languages are in stage III. They have a postverbal negative marker which spells out the entire negative spine and gives rise to Pol-negation on its own. Informal English on the other hand shows signs of change: there is a new phonologically reduced Pol^{Neg}-marker which signals that the postverbal negative marker of formal English has shrunken in size. In informal English *not* is only a Foc^{Neg}-marker. However, the change from stage III to stage I does not lead to structural deficiency of the Pol^{Neg}-marker, but to structural reduction of the Foc^{Neg}-marker. The Pol^{Neg}-neg marker is namely still spelling out all negative features of the negative spine. However, due to structural reduction of Foc, the spellout of the Pol^{Neg}-marker is phonologically reduced.

Summarizing, the nanosyntactic approach to negation is well-equipped to capture diachronic change and Jespersen's cycle, which is reflected well in the evolution from bipartite negation in *le bon usage* French to modern spoken French.

[6] See Breitbarth (to appear) for another proposal.

9.3 Conclusion

The obligatory co-occurence of both *ne* and *pas* in *le bon usage* French follows under my account from 1) the fact that both negative scope markers are part of the same spine and 2) the way the lexical items are stored in the lexicon, i.e the LI for *ne* is small and structurally deficient and cannot override *pas*. As a consequence, *ne* selects *pas*, expressesing sentential negation together.

Moreover, this case study of French negation showed that the nanosyntactic system is well equipped to account for diachronic change. The change from bipartite negation in stage II of Jespersen's cycle to the use of a postverbal negative marker in stage III is reflected by a change in size of the lexical items. Whereas the preverbal negative marker in Stage II was structurally deficient and could not override the lower negative features in the spine anymore, stage III is characterized by a Foc^{Neg}-marker, like *pas*, which grows in size.

I also pointed out how the LIs for the two registers of English that we discussed before (7), reflects another part of Jespersen's cycle: the transition from stage III to stage II. This evolution involves structural reduction of the Foc^{Neg}-marker followed by phonological reduction of the Pol^{Neg}-marker.

10

Conclusion and further prospects

10.1 Summary

This dissertation proposed a unified syntactic account for what is often referred to as sentence negation (SN) on the one hand and constituent negation (CN) on the other hand. I argued that the negative marker can be decomposed into four subatomic features which take scope in four different positions in the clause. SN and CN are unified in one featurally complex predicate negator whose scope can be extended under Agree and movement. All negative markers are scope markers of a low predicate negator.

In the first part of the dissertation I provided an answer to the following research questions concerning the internal syntax of negation.

(1) a. Which types or groups of negative markers are there?
b. Which criteria lie at the basis of the classification?
c. Which syncretism patterns can be detected between these types of negative markers across languages?
d. Which hidden structure do these syncretisms point to?

In order to answer these question I developed a taxonomy for negative markers on the basis of four properties: 1) scope position, 2) stacking properties, 3) semantic label and 4) function. The four types of negative markers I distinguished on the basis of these properties are: Pol^{Neg}-markers, Foc^{Neg}-markers, Deg^{Neg}-markers and Q^{Neg}-markers. On the basis of this taxonomy I showed that there are meaningful syncretism patterns between these types of negative markers across languages. The syncretism

patterns led to the decomposition of the negative morpheme into four negative features, namely N1, N2, N3 and N4, which I structurally represented in a hierarchically ordened nanospine of negative features. I claimed that these features are inserted in the specifier of NegP.

Given the proposal for a featurally complex NegP which I developed on empirical grounds in the first part of the dissertation, I discussed in the second part of the dissertation how this proposal can be implemented within clausal syntax, thus answering the last research questions:

(2) a. Where is Split NegP located in the clausal spine?
b. How do the negative markers/features in the nanospine end up in different positions in the clause?

The feature composition of the nanospine and evidence from reconstruction effects led to the claim that NegP is essentially a predicate negator. I detected four positions in the clausal spine which correspond to the four types of negation in the taxonomy. These positions are PolP, FocP, DegP and QP. I discussed these four positions with respect to the literature on negation and I developed an account in terms of Agree to account for the interaction between the features in the nanospine and these projections in the clausal spine.

The core of the proposal is that negation is semantically interpretable in the head of NegP at the predicate level. The scope of the semantically interpretable but phonologically empty Neg^0 can be extended, either to QP, to DegP, to FocP or to PolP via the features (and the negative markers) in SpecNegP. Negative markers are thus scope markers of a semantic predicate negator. They are themselves not semantically negative, but syntactically valued for negation. Whether scope is taken in QP, DegP, FocP or PolP depends on the size of the negative nanospine. If the nanospine consists of only one feature, N1, which is endowed with an uninterpretable Q-feature that is valued for negation, [uQ:Neg], then the scope of negation will never exceed QP. If the nanospine consists of the features N1, N2, N3 and N4, then the negative marker can — but does not always need to — take scope in PolP.

The account proposed supports a valuation driven Agree-system (Pesetsky and Torrego 2007, Bošković 2009, 2011). On top of that the proposal supports an account by Bošković (2009, 2011) who argues that valued but uninterpretable gender features can be deleted without checking. I show how the effect of deletion without checking within the domain of negative scope features does not lead to a crash for negative markers, but to interpretative differences for negation.

In the final part of the dissertation I discussed support for the proposal and I extended the proposal to French. I presented data from intervention effects which showed that sentential negative polarity is expressed in PolP and which supported the structure of the nanospine as proposed in this dissertation. Finally, I argued that the

unified system proposed in this dissertation is well-designed to capture diachronic change within the domain of negative markers, i.e. the Jespersen's cycle, and I demonstrated this by means of a discussion of bipartite negation in French.

10.2 Further prospects

Due to the novel perspective I take in this dissertation, the proposal raises many questions and it unavoidably leaves many issues for further research. I discuss a few of these issues briefly in this section.

10.2.1 FocP and negation

A first question is what the precise relation is between focus and negation. This proposal uses a low focus position within the clause as a scope position for negation. Consequently, the proposal predicts that negative sentences behave differently from affirmative sentences with respect to focussed constituents, which have been claimed to make use of this position.

One of the constituents which have been argued to make use of this position are postverbal subjects in Italian (Belletti 2001, 2004). Belletti's (2004) claim is based on contrasts as in (3). As a reply to a question which requires identification of the subject, only the reply with the post-verbal subject in (3b) is appropriate. The reply with the subject in preverbal position is not appropriate in the given context, (3c).

(3) a. Chi ha parlato?
b. Ha parlato Gianni.
c. #Gianni ha parlato. (Belletti 2004:21)

On the basis of this contrast Belletti (2004:22) concludes that the subjects in these different positions contribute different information structural content. The post-verbal subject carries new information focus, whilst the preverbal subject is a topic. She proposes that the post-verbal subject moves to the specifier of a low FocP.

Under the account proposed in this dissertation the question arises how to account for post-verbal subjects if negation takes scope in low FocP in order to be able to express sentential negation. I tentatively propose that in negative sentences post-verbal subjects are always (contrastive) topics. Evidence for this proposal comes from the answer pair in (4) in contrast with the pair in (3). These data show that when the reply to a question which requires identification of the subject contains a Pol^{Neg}-marker, the reply with the postverbal subject is considered less appropriate, (4b), than the reply with the preverbal subject, (4c).[1] When a corrective statement is added the sentence with the post-verbal subject improves to full acceptability again, (4d).

[1] Thanks to Fabio Tiriticco for help with the data. Any errors are mine.

(4) a. Chi ha parlato?
b. ?Non ha parlato Gianni.
c. Gianni non ha parlato.
d. Non ha parlato Gianni, ha parlato Alberto.

Even though a full analysis of these data is beyond the scope of the present dissertation I take them as support for the idea that in the presence of negation the low FocP cannot host new information subjects. Post-verbal subjects in negative sentences are rather (contrastive) topics in this case, an option which Belletti (2004:17) showed was available for post-verbal subjects anyway.

With respect to clefts, Belletti (2008a) proposed that post-copular subjects in clefts can raise out of the embedded CP to the specifier of a low FocP, on the vP-shell which hosts *be*, to become the focus of new information.

(5) a. Qui a dit cela?
b. C'est Jean (qui a dit cela).

In light of the present proposal the prediction is that in negative clefts, the subject of the cleft does not target FocP. However, negative subject clefts, (6b), are possible replies to questions as in (6a). At first sight there doesn't seem to be a contrast with respect to acceptability compared to an affirmative reply.[2]

(6) a. Qui a dit ç?
b. C'est pas moi!

However, the acceptability of negative subject clefts does not necessarily mean that the subject of the cleft always moves to SpecFocP. Belletti herself recognizes that not all subject clefts always move to low SpecFocP. They could move to the left periphery of the embedded CP. Moreover, in object clefts, the object of the cleft is also argued to remain in the embedded CP.

A similar issue arises with respect to English in situ focus in sentences like (7).

(7) Have you given John HIS GRADE yet? (Servidio 2009:21)

Under the present account the obvious question is what happens with a stressed constituent in the scope of negation, as in (8).

(8) John didn't buy YOUR BOOK.

According to Servidio (2009) focus in situ can undergo long distance Agree with a left peripheral FocP. This could be a solution to the problem for data like (8). On the other hand, *your book* in the scope of negation seems more like a contrastive topic, whereas

[2]Thanks to Michal Starke for help with the data.

the negative marker introduces the new information by doing away with the discourse topic which is '*your book*'.

Future research should show what the right analysis is for post-verbal subjects in negative sentences, for negative clefts in French and for in situ focus in English negative sentences and whether they indeed behave differently from affirmative clefts, as predicted by the present proposal. More in general, the information structural properties of affirmative versus negative sentences are an interesting topic of further research.

10.2.2 Negative indefinites

One of the bigger issues this approach raises is how it fares with respect to negative indefinites such as English *no*, *nothing* or for instance Czeck n-words like *nikdo*.

It has been argued for negative indefinites that they consist of two parts: an indefinite and a sentential negator, which need each other to be properly licensed. In most recent syntactic implementations (Zeijlstra 2004, Penka 2012), these two parts need to Agree in order to give rise to sentential negation. If the negative indefinite, is out of the scope of a sentential negator, then some local negative operator emerges to license the uninterpretable negative feature on the indefinite (Penka 2012). However, this is not the only proposal for negative indefinites that has been made. Under some approaches, especially those focussed on double negation languages like English and Dutch, amalgamation approaches are proposed: the indefinite and the negative component fuse, amalgamate or incorporate (Jacobs 1980, Rullman 1995, Van Craenenbroeck and Temmerman 2010, Zeijlstra 2011, Temmerman 2012).

From the perspective of the present proposal there is at least a partial syncretism between the negative marker *not* and negative indefinites like *no*, *nothing*, *never*, *nobody* in English. Therefore, the most straightforward approach to negative indefinites seems to be that the indefinite incorporates into one of the layers of the negative spine. Whether a language is a negative concord language or a double negation language could be related to this proposal. When indefinites incorporate into a low layer of the negative spine, the remaining features in the negative spine will still need to be spelled out to give rise to Pol-negation, leading to the co-occurence of two (or more) negative markers. When the indefinite on the other hand incorporates into the Pol-layer, a negative indefinite like English *no* could be formed which can express sentential negation on its own.

More research should shed light on how well the present approach fares with respect to negative indefinites. A nanosyntactic approach towards negative indefinites from a cross-linguistic perspective would be useful to better understand the atoms underlying the composition of negative indefinites. Once we have a clear view on how negative indefinites can be decomposed from a cross-linguistic perspective, their

distribution and interaction with negative markers in the clause will be better understood.

10.2.3 Verbal predicates

The negative nanospine and the Neg-related projections in the clausal spine that I discussed are based on data of negation in combination with adjectival predicates. As claimed in chapters 5 and 8 I believe the proposal for copular clauses can be carried over to clauses with verbal predicates, modulo certain adaptations. This would mean that also with verbal predicates a NegP, containing a specifier with a complex nanospine, is merged on VP.

An argument for this claim comes from a language like Czech, where the prefixal negative marker on verbal predicates is syncretic with the marker for sentential negation (e.g. the Czech verb for *disagree* is *nesouhlasit*). The Q-layer on adjectives can thus also be detected on verbal predicates and more importantly, there are languages where it shows syncretism with the Pol^{Neg}-marker. As discussed in 5, the close connection between the Q-layer and the lexical predicate was one of the arguments to base-generate NegP so low in the clausal spine.

More support that my proposal can be extended to verbal predicates comes from the cartographic work by Zanuttini (1997) and Poletto (2008) on Italian dialects, as discussed in section 4.2.5. Zanuttini looked at the different positions for sentential negation with verbal predicates in Italian dialects. She concluded that sentential negative markers can occur in four positions distributed across the clausal spine. Since she claims that negative markers in the lower positions need to move at LF to give rise to sentential negation, the implication is that not all of these negative markers in these four positions always give rise to sentence negation. Poletto looked at the etymological origin of negative markers in these four positions and arrived at a subclassification of negative types which is comparable to the classification I arrived at independently using a different methodology for a different data set (cf. sections 4.2.5 and 6.2.3).

The fact that their work is in many ways so parallel to mine, even though we looked at different languages and different predicates and used a completely different methodology, is encouraging. One conclusion shared by all our work is definitely established: there are different types of negation which can be featurally distinguished and which distribute differently in the clause.

I take the above observations as support for the idea that the proposal defended in this dissertation, namely a unification of sentence and constituent negation, can be carried over to verbal predicates. Nevertheless, cross-linguistic future research on syncretism patterns in the domain of verbal negative markers is necessary to validate this claim.

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