

Introduction: the syntax of sentential negation

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This volume brings together eight articles on the syntax of negation. The authors of the papers adopt the generative approach to syntax; their papers are significant for three (partly related) reasons. (i) In general, the papers are representative for the recent generative research on negation; (ii) the papers are important of their own right, each offering theoretical claims with respect to the syntax of negation and its role in the sentential structure; (iii) the papers also offer detailed descriptions of important empirical domains, and some of these the papers offer a first generative analysis of the data treated.

In my introduction I discuss what I consider the major features of the generative approach to sentential negation. Section 1 focuses on the empirical parallelisms between the syntax of negative sentences and that of interrogative sentences. Section 2 presents earlier analyses of sentential negation in English elaborated by Klima (1964) and Lasnik (1972). Section 3 discusses some of the recent proposals for the syntactic analysis of sentential negation. One major issue is the status of the functional projection NegP and its interaction with the other functional projections of the clausal domain. The section also offers a formalization of the parallelisms between negative and interrogative sentences developed in section 1, coupled with the theoretical insights elaborated by Klima and by Lasnik, and with the recent emphasis in the theory on specifier head relations in syntactic licensing. I will also briefly turn to the more recent so-called Minimalist developments in the generative tradition, as initiated by Chomsky (1993) and developed in a representational variant by Brody (1993). Section 4 introduces the papers contained in this volume, situating them against the background outlined in sections 1-3.*

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I use this opportunity to thank all the contributors to this thematic issue for their enthusiastic collaboration and for the quick response to requests for papers and for modifications. I am very happy with the papers they have submitted, which are representative for the current work on negation in the generative framework. I thank Valentina Bianchi for her cheerful and never failing help on the editorial work on the papers. Thanks to Eric Haeberli and to Michal Starke for their help.

1. Introduction: negative sentences and interrogative sentences.

As we will see in section 2.1, Klima's early work on negation (1964), where negative sentences were characterized by the presence of a negative constituent (*NEG*) immediately dominated by *S*, analogously to the interrogative constituent (*WH*) in questions, is an early example of the tendency to assimilate the analysis of negative sentences to that of interrogative sentences. The same approach is developed in Lasnik's (1972) analysis, which associates both *NEG* and *WH* with the *COMP* node. Before summarizing their analyses I list some of the parallels between the properties of negative sentences and those of interrogative sentences.

In English both negative constituents and interrogative constituents license polarity items such as *anyone* or *ever*.¹

- (1) a. did you see anyone?
- b. I did not see anyone
- c. *I saw anyone

- (2) a. did you ever go to the mountains?
- b. no one ever went to the mountains
- c. *he ever went to the mountains

- (3) a. who said anything?
- b. no one said anything
- c. *I said anything

Both preposed interrogative constituents and preposed negative constituents give rise to subject auxiliary inversion in root sentences (see Liberman 1974; Culicover 1991).

- (4) a. what did you see?
- b. never in my life will I do that again

Interrogative elements in [Spec,CP] give rise to strong island effects:

- (5) a. ?who_i do you wonder [CP whether [IP they will fire t_i?]]
- b. *why did you wonder [CP whether [IP they will fire John t]]

In (5a) the *WH* phrase *what*, an argument of the lower clause, occupies [Spec,CP] of the matrix clause. The slightly degraded status of the sentence is due to a subadjacency effect: *whether* in the embedded

¹ See the contributions by Progovac and by Duffield to this volume for discussion and for some survey of the literature. See also Ladusaw (1982), Laka (1990), Liberman (1974), Linebarger (1987), Progovac (1988, 1990, 1991).

[Spec,CP] creates a *WH* island. In (5b) long construal of the adjunct *why* leads to strong ungrammaticality: the moved *WH* phrase cannot be connected back to a trace in the embedded clause. In (5a) the trace of *who* has a referential index which enables it to be identified by binding, an option which is not available for non-argument traces, such as the adjunct trace of *why* in (5b) (Rizzi 1990). Adjunct traces can only be identified by antecedent government; intervening *WH* elements in *A'* positions have a blocking effect on antecedent government by *WH* constituents. Hence the preposed *why* in (5b) cannot be connected to a trace within the *WH* island.

Negative operators create weak islands: unlike *WH* operators, intervening negative operators do not create subadjacency effects (cf. (5)), but like *WH* operators they block antecedent government (examples from Rizzi 1990 who cites Ross 1983):

- (6) a. why did they say that John was fired?
- b. why did they not say that John was fired?

In (6a) long construal of *why* is possible, in (6b) it is excluded.

negation appears to create opacity effects on adjunct variables, a state of affairs which is obviously reminiscent of ...*WH* islands... If negation qualifies as a typical potential *A'* binder (an *A'* specifier), the inner-island effect can be reduced to the ECP through relativized minimality: if a non-*Theta*-marked element is extracted from the domain of negation, it will be unable to antecedent-govern its trace because of relativized minimality, and an ECP violation will result. ... (Rizzi 1990:17-18)

Observe that inner island effects are not only caused by the presence of *not*. In (7b) *no one* gives rise to an inner island:

- (7) a. it is for this reason that everyone believes that Bill was fired.
- b. it is for this reason that no one believes that Bill was fired.

...(7a) is ambiguous, whereas (7b) can mean only "This is the reason which motivates the fact that no one believes that Bill was fired," and not "This is the reason such that no one believes that Bill was fired for this reason." (Rizzi 1990:19)

A further syntactic phenomenon that brings negative constituents in line with interrogative ones is illustrated in French (8):

- (8) a. qui disait quoi?
 who said what
 for which x, y [x: a person; y: a thing] [x said y]

- b. *personne ne disait rien*
 no one said nothing
 'no one said anything'
 no x, y [x: a person; y: a thing] [x said y]

(8a) illustrates WH absorption. (8a) contains two question words; the interpretation of the sentence is that of a single question, i.e. we represent its LF by means of one WH-operator which binds two variables, and a typical reply will pair persons and things which they said. This effect is achieved, it is standardly assumed, by LF-adjunction of the non moved WH-constituent *quoi* to the already moved *qui* in [Spec,CP] (cf. Higginbotham & May 1981, Lasnik & Saito 1984).

Compare the Negative Concord (NC) interpretation of (8b) with the interpretation of (8c), which in standard English has a reading of Double Negation (DN).

- (8) c. no one has done nothing
 no x [no y [x did y]]

In (8c) the two negative operators, *no one* and *nothing*, each contribute their own negative force to the clause, resulting in negation elimination: the first negative operator takes scope over, thus cancels, the second. In (8b), the two negative operators, *personne* and *rien*, do not cancel each other, rather they enter into a NC relation: they jointly express a single negation. NC can be reinterpreted as an instantiation of absorption. In the case of WH absorption one interrogative operator binds *n* variables, i.e. the interrogative operator ranges over a number of constituents; in the case of NC, one negative operator binds a number of variables (cf. Zanuttini 1989, Hageman & Zanuttini in press). In the same way that languages vary as to whether they admit WH absorption (English and French do, Italian does not), languages vary as to whether they allow for NC (French and Italian do, standard English does not, Black English and other English dialects do (cf. Labov 1972; Ladusaw 1991)).

In the literature, the scope properties of negative constituents are usually expressed in terms of S-structure or LF movement. This type of analysis is used to account for ECP effects as illustrated in (9) (Kayne 1981, 1984; Rizzi 1982):

- (9) a. ?*non pretendo che nessuno sia arrestato
 'I not require that nobody be arrested'
 b. non pretendo che la polizia arresti nessuno
 'I not require that the police arrest no one'
 (cf. also Zanuttini 1991; Longobardi 1987)

The ungrammaticality of (9a) is related to the *that* trace effect observed in (10a):

- (10) a. *who did you think that t would arrive first?
 b. who did you think t would arrive first?

In (10a) the extraction of *who* crosses *that*, this results in a configuration where the subject trace fails to be properly governed. The ungrammaticality of (9a) is accounted for in similar terms if we adopt the hypothesis that at LF *nessuno* ('no one') has to move to the negative head *non*. In the literature (Kayne 1981, 1984; Rizzi 1982) the assumption was that *non* is a scope marker and that the negative constituent moves to the scope marker at LF. In section 3 I update this account.

2. The early generative tradition.

2.1. Klima (1964).

2.1.1. Questions.

Already the earliest research in the generative tradition pursued the parallelism between the syntax of negative sentences and that of interrogative sentences. Klima (1964: 251) proposed that

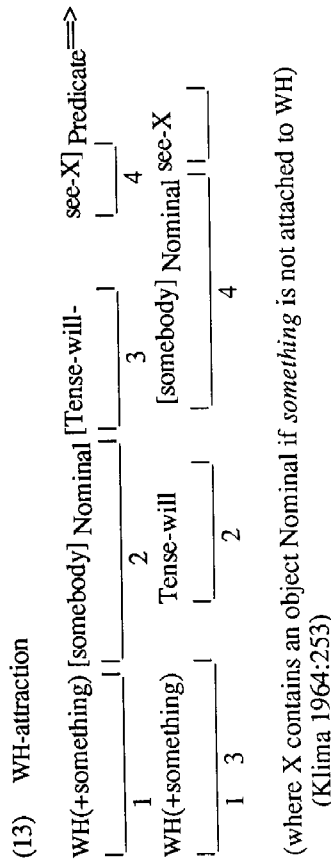
the initial expansion of S(sentence) may optionally include, aside from the Predicate and the Nominal functioning as subject, also the symbol WH. One of the functions of WH is to relate questions grammatically to the declaratives that those questions correspond to. Thus, "Will someone see something" and "Someone will see something" are related at the level of constituent structure by the absence versus the presence of the constituent WH....

- (11) S ---> (WH) Nominal - Predicate
 (Klima 1964:250-1)

In Klima's approach, WH-phrases such as *who* or *what* are decomposed into two D-structure components: the pre-sentential WH constituent, represented as WH in (11) above, and an indefinite latter is incorporated by the WH-constituent as a result of the incorporation rule (12):

- (12) Incorporation into WH (optional)
 WH-somebody-Predicate ==> WH+somebody-Predicate
 WH-Nominal-Aux-Verb-something ==> WH+something-Nominal-Aux-Verb

Constituent questions differ from the corresponding declaratives by the presence of the WH-constituent, which triggers movement of the indefinite to an initial position. In Klima's approach, WH-movement is movement of an indefinite constituent towards the sentence-initial WH morpheme. In root sentences, the presence of the pre-sentential WH triggers inversion of the auxiliary and the subject by WH attraction:



As is the case for constituent questions, *yes/no* questions are characterized by the presence of the pre-sentential WH constituent. In root questions WH triggers subject auxiliary inversion. Klima proposes that in root *yes/no* questions the pre-sentential WH-constituent is deleted; in subordinate clauses a WH constituent which does not incorporate another constituent is spelt out as *whether* or *if*.

One problem for Klima's approach is that it is hard to see how to derive sentences such as (14) with multiple WH constituents:

(14) who did what to whom?

Klima's analysis develops the hypothesis that there is one pre-sentential WH constituent per clause. Klima himself does not deal with multiple WH questions.

2.1.2. Negative sentences

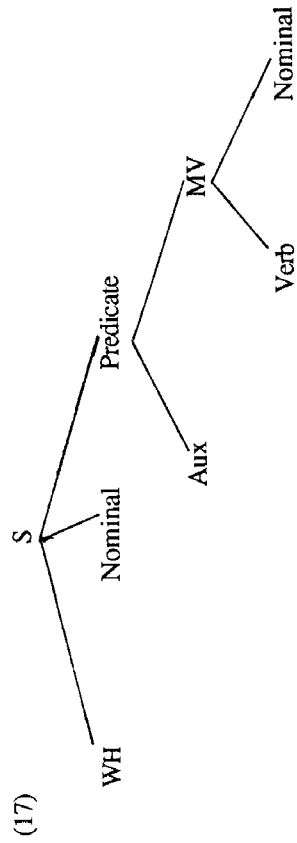
Klima treats negative sentences essentially on a par with interrogative ones: negative sentences are also characterized by the presence of a pre-sentential constituent dominated immediately by S: *NEG*:

NEG appears, optionally, as part of the expansion of S(entence), alongside of (a) the interrogative marker WH-, which is also optional, (b) the subject Nominal, and (c) the Predicate. By this assumption, the constituent structure of *NEG* is related to that of WH-. This relationship is not arbitrary. *NEG* is similar to WH-

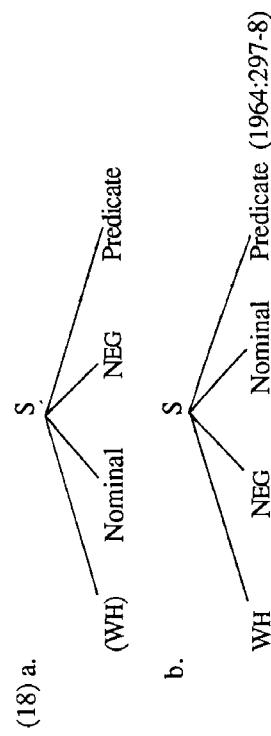
both in its constituent structure and in its relationship to the symbols with which it occurs. The effect of the pre-verbal particle *NEG* in motivating the occurrence of indefinites is matched by the similar effect of WH, which similarly has as its scope the whole sentence. Moreover, *NEG* shares with WH not only the possibility of attachment with a great variety of constituents, but also the capacity of motivating inversion.

- (15) a. who (WH+someone) will accept suggestions?
 b. no one (NEG+anyone) will accept suggestions
- (16) a. when (WH+sometime) will he marry again?
 b. never (NEG + ever) will he marry again

Klima proposes that the scope of *NEG* and that of WH can be described in terms of the configurational relation 'in construction with', which is the converse of the notion 'c-command' in the current framework (Klima 1964:299), if Y is in construction with X in Klima's approach, then X c-commands Y in current terms. In terms of Klima's clause structure, the entire S will be in the scope of pre-sentential WH.



NEG has two base positions: before the predicate or before the entire declarative clause:²



² For the association of *NEG* with the sentential inflection node as well as with the immediate expansion of the sentence I refer the reader to Progovac's contribution to this volume.

Klima generalizes the incorporation of indefinite constituents by pre-sentential constituents: both WH and NEG incorporate indefinites:

$$(19) \text{ Indef-incorporation}$$

$$\left\{ \begin{array}{l} \text{WH} \\ \text{NEG} \end{array} \right\} \text{ X - Quant - Y} \rightarrow \left\{ \begin{array}{l} \text{WH} \\ \text{NEG} \end{array} \right\} \text{ X - Indef + Quant - Y}$$

(1964:299)

When unattached to other lexical material NEG is spelt out as *not*. A rule of *not* placement ensures that *not* ends up in the AUX position. Klima unifies his analysis of interrogative and negative sentences and extends it to include restrictives, conditionals and adversatives:

As for the grammatical similarities of NEG, WH, and *only*, these will now be described as resulting from the presence of a common grammatico-semantic feature to be referred to as *Affect(ive)*. Any *Quant(ifier)* in construction with a constituent that contains the feature *Affect(ive)* may ultimately appear as an indefinite.

A further consequence of the presence of the feature *Affect(ive)* is that in pre-sentential position, morphemes containing that feature motivate inversion, ... Thus the individual rules of inversion described by NEG-attraction... and WH-attraction... are generalized and extended to pre-sentential *only* by a rule of *Affect-attraction*.

$$(20) \text{ a. Indef-incorporation...}$$

$$[\text{Affect}]_{\text{GSF}} \text{ X-Quant-Y} \Rightarrow \text{Affect-X.Indef+Quant-Y}$$

Condition: Quant is in construction with the constituent containing *Affect*

$$\text{ b. Affect-attraction ...}$$

$$[\text{Affect}]_{\text{GSF}} \text{ Nominal-aux}^1\text{-aux}^2 \Rightarrow \text{Affect-aux}^1\text{-Nominal-aux}^2$$

Where the constituent containing the feature *Affect* may have other constituents incorporated into it.
(Klima 1964:313)

Klima treats *Affect*, i.e. NEG or WH, as an independent grammatical feature present on a D-structure morpheme. In the current framework such features are instantiated on functional heads.

2.2. Lasnik (1972).

Lasnik (1972) postulates two positions for sentential negation: the pre-sentential position and the position Aux. This allows the derivation

of English sentences such as (21), where a sentence-initial constituent with *not* co-occurs with a second occurrence of *not* associated with Aux. Lasnik's analysis is not obviously equipped to deal with sentences in which multiple negative constituents enter into an NC relation such as French (22a) or Italian (22b):³

(21) not many arrows did not hit the target

(22) a. *personne n'a jamais rien fait*
no one ne has never nothing done
'no one ever did anything'

b. *nessuno ha mai fatto niente*
no one has never done nothing
'no one ever did anything'

An interesting property of Lasnik's analysis is the intimate link he establishes between the sentential operators and the nodes COMP - i.e. C in the more recent framework - and AUX - i.e. the functional heads that make up the I complex in the current framework. If we interpret WH and NEG in terms of features then these will be associated with the heads of the clausal projections, C(omplementizer), the head of CP, and I(nflection), the head of IP.

3. Current analyses of the syntax of Negation.

3.1. The functional projection NegP.

The analysis of negation has gained renewed interest following seminal work on the structure of the clause proposed by Pollock (1989) and others, who associate sentential negation with a functional projection NegP, whose head is sometimes realized overtly (French *ne*, Italian *non*) and is sometimes non overt, and whose specifier likewise may be overt (French *pas*) or non overt.⁴ Though there seems to be a

³ For reasons of space I cannot go into the detailed description of Negative Concord (cf. Haegeman & Zanuttini in press and Haegeman 1991 for some discussion on configurational constraints on Negative Concord). For seminal work on Negative Concord in English cf. Labov (1972); for a recent analysis: Ladusaw (1991). For Haitian Creole see DeGraff (1992).

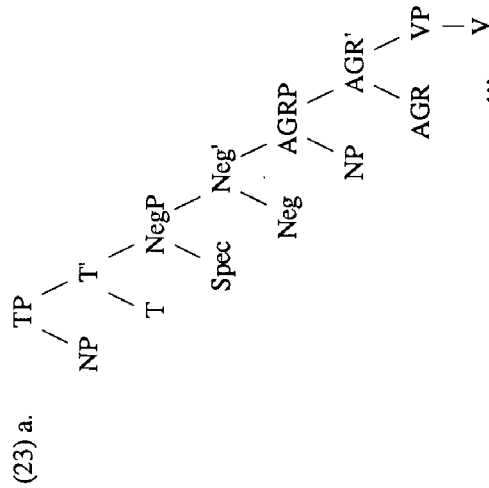
⁴ Pollock's arguments for postulating NegP are essentially based on V movement and on the positions of *not* and *pas*. Independently Kayne (1989) argues that the hypothesis that Italian *non* or French *ne* are heads can explain why clitic climbing out of negated infinitivals is blocked in Italian (i) and in French (ii):

- (i) a. Gianni vuole non vederli
Gianni wants not to see them
b. *Gianni li vuole non vedere
c. Gianni vuole vederli
Gianni wants to see them

relatively large consensus as to the fact that there is a NegP, its position in the clause structure is the subject of ongoing debate. The different proposals also reflect theoretical developments in the general treatment of inflectional morphology.

3.1.1. *TP above NegP: Pollock (1989).*

Pollock (1989) proposes that NegP is dominated by TP and that it dominates AGRP:



3.1.2. *AGRP dominates TP: Belletti (1990).*

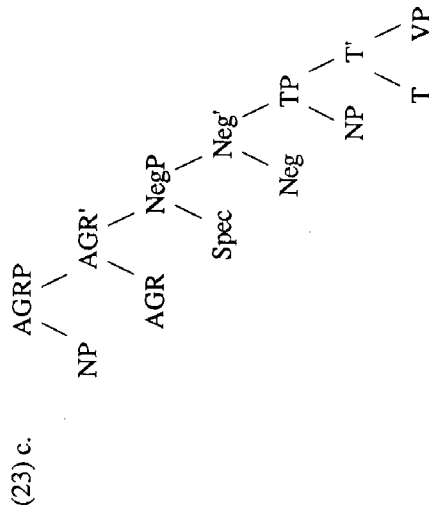
Consider the overt sequencing of inflectional morphology in French (23b):

- d. Gianni li vuole vedere
Gianni them wants to see
- (ii) a. cela l'a fait manger à l'enfant
this it has made eat to the child
'that made the child eat'
b. *cela l'a fait ne pas manger à l'enfant
that it has made not eat to the child

For important discussion of the position of negative adverbials like *pas* and *plus* see also Rowlett (1993) and Hirschbühler & Labelle (1993). For the analysis of *ne rien* (*ne* nothing) in French, see Pollock (1989).

- (23) b. nous parl-er-ons
we speak-FUT-1pl
'we will speak'

The AGR morphology is outside the Tense morphology. Based on the Mirror Principle (Baker 1985), Belletti (1990) argues that the ordering of the inflectional morphology reflects the hierarchical ordering of the functional nodes and that AGRP dominates TP. The bare V first moves to T to pick up the Tense morphology, then to AGR to pick up the Agreement morphology. The sequencing of the AGR and T morphemes reflects the derivational history of their attachment.



3.1.3. *MoodP above TP: Pollock (1993).*

Pollock (1993) argues that though (23c) may well be compatible with a derivational approach where inflectional endings are generated separately as functional heads and are combined with the verb as a result of head-to-head movement, (23c) is not the only structure compatible with a checking approach (cf. Chomsky's 1993 Minimalist Program), where lexical heads such as V are base-generated with their inflectional morphology:

verbs enter the computational component in their fully inflected morphological form x, analysed as in (24)

(24) x = [Root + Infl1 + ... + Infln]

x further adjoins to some 'syntactic' inflectional head I, forming (25):

(25) $[_I x,]_1 \dots$

under fairly standard ideas concerning morphology ... (24) is really the simplified version of (26), where each $infi_i$ is the head of the constituent to its left.

(26) $x = [_{infi_1} \dots [_{infi_1} \text{Root-infi}_1]_1 \dots infi_n]$

So for example a future form like *parlerons* ('we will speak') in French would be analyzed in simplified fashion as in (27):

(27) $[[[_{root}\text{-par}] \text{-er}_{\text{Tense/mood}}] \text{-ons}_{\text{AGR}_s}]$

(28) below is more adequate for the checking of the inflectional affixes:

the outer 'shells' of a morphologically complex item are to be checked first. On that view (27) should first move to AGRs to get the 1person pl marker *-ons* 'checked' (i.e. 'peeled off' in Chomsky's theory), then to T to get the Tense-mood marker *-er* checked. (1993: 25-27)

(28)

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      TP
      / \
    Spec  T
          / \
         T  AGRP
            / \
           AGR'
            / \
           AGR  VP
  
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In addition to the functional projections in (28) Pollock also proposes that there is a functional projection Mood Phrase. He follows Zanutini (1991) and assumes that NegP is high in the structure of clauses:

(29)

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      MoodP
      / \
    Spec  Mood'
          / \
         Mood  NegP
            / \
           Spec  Neg'
              / \
             Neg  TP
                / \
               T  T'
                  / \
                 T  AGRP
                    / \
                   AGR'
                    / \
                   AGR  VP
  
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3.2. The Affect criterion.

Interrogative operators (*who*) and negative operators (*no one*) are usually generated as D-Structure constituents characterized by the relevant morphological feature, [WH] or [NEG] respectively. A clausal grammatical feature [WH] or [NEG] is associated with a clausal functional head. In order to account for the syntactic phenomena described in section 1 and involving affective operators, Rizzi (in press) speculates that affective elements are subject to a licensing requirement stated in terms of spec-head agreement. This requirement is formulated in Haegeman (1992) as the AFFECT criterion:

(30) AFFECT criterion

- a. an [AFFECTIVE] operator must be in a Spec-head configuration with an [AFFECTIVE] X^0
- b. an [AFFECTIVE] X^0 must be in a Spec-head configuration with an [AFFECTIVE] operator.

The affective features on the relevant constituents have to be checked against matching features on functional heads. If necessary, movement (in the syntax or at LF) will create the specifier head configuration.

One instantiation of the AFFECT criterion is the WH criterion, first proposed in May (1985) and elaborated and discussed in detail in Rizzi (in press):

(31) WH criterion (May 1985; Rizzi in press:2)

- a. a WH-operator must be in a Spec-head configuration with an X° with the feature [WH]
- b. an X° with the feature [WH] must be in a Spec-head configuration with a WH-operator

Rizzi develops his analysis against the background of the classical Government and Binding-model, with the three level syntax. In his analysis, the WH criterion must be satisfied at LF at the latest, but, as will be illustrated by (32), it applies as early as S-structure in English:

- (32) a. *I wonder you saw who
- b. I wonder who you saw
- c. *she thinks where Mary went

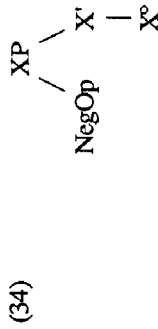
In (32a) and (32b) *wonder* selects an interrogative CP, i.e. a CP whose head C has the feature [+WH]. (32a) violates clause (31b) of the WH criterion: the head carrying the WH feature does not have a matching specifier. (32b) is grammatical: WH-movement has moved *who* to [Spec,CP], where it will have the required specifier-head relation with the WH-head, C. (32c) is ungrammatical because the WH operator *where* in the lower [Spec, CP] does not have a specifier-head configuration with a WH-head: *think*, unlike *wonder*, does not select an interrogative CP.

Consider the data of negative inversion:

- (33) a. I would do that in no case
- b. *in no case I would do that
- c. in no case would I do that

Rizzi says:

It seems quite natural to try to relate this case to the obligatory application of I to C in questions. ... questions and negative operators pattern alike in blocking adjunct extraction ... such a blocking effect is due to the fact that these operators differ from other operators in that they fill an A' specifier position at LF. I would now like to state this scope requirement as resulting from the fact that such affective operators must fulfil at the appropriate level of representation an appropriate generalization of the WH criterion: informally, affective operators must be in a spec-head configuration with a head marked with the relevant affective feature....



(Rizzi in press: 11)

The well formedness condition which determines the distribution and interpretation of negative elements is formulated as the NEG criterion (Haegeman & Zanuttini 1991 and in press) and reads as follows:

- (35) NEG criterion
 - a. a NEG-operator must be in a Spec-head configuration with an X° [NEG]
 - b. an X° [NEG] must be in a Spec-head configuration with a NEG-operator

We return to the implementation of the NEG criterion below.

3.3. Parametric variation.

3.3.1. The WH criterion.

The implementation of the AFFECT criterion is subject to cross linguistic variation. With respect to WH movement there are two types of cross linguistic variation: (i) between languages with *multiple* WH-movement (such as Hungarian) and those without (such as English); and (ii) between languages with WH movement and those lacking it altogether. Languages with multiple fronting include, among others, Polish, Serbo-Croatian, Czech, Bulgarian, Hungarian and Romanian (cf. Brody 1990, Rudin 1988, Puskas 1992, Wachowicz 1974). In these languages, when a sentence contains more than one WH phrase, all the WH phrases move to the beginning of the sentence.⁵

- (36) a. kto cto kogda skazal? (Polish, from Wachowicz 1974, Rudin 1988:446)
 - who what when said
 - 'who said what when?'

⁵ There are differences between the languages that exhibit multiple fronting, as discussed in detail by Rudin (1988). Basing her analysis of various tests she concludes that:

the behaviour of multiple WH words in Bulgarian and Romanian indicates that they are all in SpecCP, while in Serbo-Croatian, Polish, and Czech only one of the fronted WH-words is in SpecCP. (Rudin 1988:450)

I do not go into this difference here (cf. Puskas 1992).

Languages such as Japanese (and Chinese) lack overt WH movement altogether, this suggests that all WH movement applies as late as LF and that the WH criterion is not applicable at S-structure.

- (36) b. John-ga dare-o butta ka siranai (Japanese, from Lasnik & Saito 1984)
 John who hit Q know not
 I don't know who John hit'

3.3.1.1. Earliness.

One way of interpreting the difference between languages with (multiple) movement and those without is to postulate (with Pesetsky 1989) an Earliness Principle which forces movement to apply as early as possible: movement which *can* apply at S-structure *must* apply at S-structure and cannot be delayed till LF.

- (37) Earliness Principle (Pesetsky 1989)
 satisfy grammatical requirements as early as possible on the hierarchy of levels:
 DS>SS>LF>LP

WH phrases are intrinsically operators: at LF they have to occupy a scope position from which they bind a variable. This means that WH phrases will not be able to remain in their base position. When a sentence contains multiple WH phrases they ultimately all have to be fronted, i.e. at LF they all must be moved and bind a variable.

In Japanese, S-structure movement is not possible; in English only one constituent can move but multiple movement to [Spec,CP] is not possible at S-structure, and in Polish and Hungarian multiple movement at S-structure is possible and it is also obligatory. The availability of syntactic movement could be related to the syntactic properties of the language in question. For instance, we might say that adjunction to CP or to [Spec,CP] is excluded at S-structure in English, which means that multiple movement is excluded at that level.

If the grammar of a language allows for syntactic WH movement then, by Earliness, WH movement must apply at S-structure; this would be the case for English. If the language does not allow for WH movement, then there can be no S-structure movement. This would be the case of Japanese. If the language allows for multiple fronting at S-structure, then, by Earliness, the movement of all the WH phrases will be enforced; this would be the case in Hungarian or Polish. If the grammar of the language does not allow multiple movement, then multiple WH fronting will not apply at S-structure and it will be delayed till LF.

Recently, there have been proposals that the variation between languages with overt WH movement and those without does not mean

that the latter lack WH-movement at S-structure. Watanabe (1991) proposes that while there is no overt movement in Japanese, there is non-overt movement of an abstract WH operator, represented as OP, which is extracted from the WH phrase.⁶ Very roughly, the Japanese example (36b) with the WH constituent *dare-o* ('who') *in situ*, would have the representation (38), where OP has been extracted from the WH phrase.

- (38) [OP_i [John-ga [dare t_i] o butta] ka] siranai
 John who hit Q know not

The non-overt operator OP is an abstract WH operator which would be extracted and moved to a scope position. In Watanabe's account the difference between languages with WH movement in the syntax, such as English, and languages which appear to lack WH movement, such as Japanese, is not that in one language there is WH movement at S-structure and in the other there is not. WH movement of the abstract operator OP is universally required at S-structure; all WH phrases are associated with an abstract operator; and minimally it is the abstract operator which moves at S-structure. The difference between English and Japanese is that in English the abstract question operator OP cannot be separated from the WH constituent with which it is associated and in Japanese it can. If we return to the earlier discussion, Watanabe's analysis would mean that the WH criterion universally applies at S-structure.

Watanabe's account presupposes an economy based account in which movement is restricted to what is required. In principle it is enough if the abstract operator moves at S-structure and this is what happens in Japanese. If only the abstract operator has to move and if this is possible in the grammar of Japanese, then only the abstract operator will move: all additional movement would be superfluous hence non economical. The grammar of English does not allow the non-overt operator to be separated from the associated WH phrase. Thus the WH operator must pied pipe the associated WH phrase. The variation between Japanese and English reduces to the question whether or not the abstract operator can be separated from the associated WH phrase.

3.3.1.2. Procrastinate.

Chomsky's Minimalist Program (1993) develops the idea that syntactic mechanisms are regulated by economy principles which delay

⁶ For similar ideas see also Aoun & Li (1993).
 Note that Watanabe's decomposing of the interrogative constituent into a WH operator and the associated constituent is reminiscent of Klima's decomposing of WH phrases discussed in section 2.1.

movement as late as possible ('Procrastinate'). Obviously, such a view is not compatible with the Earliness account discussed in section 3.3.1.1. As seen above, Watanabe (1991) argues that there is evidence for covert WH-movement even in languages which lack overt movement, such as Japanese. Interpreting this proposal in terms of the Minimalist Program Chomsky (1993:31-2) says

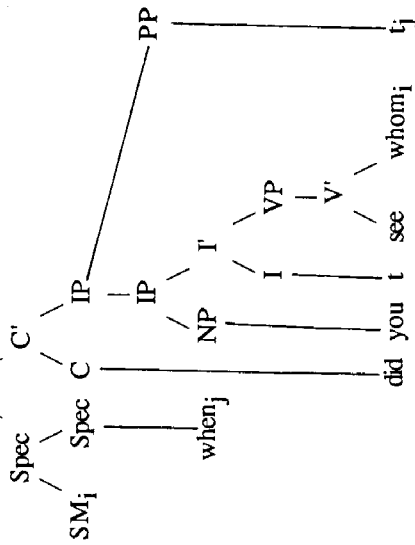
If Watanabe's theory of WH movement is correct, there is no parametric variation with regard to WH-in-situ: the language differences (say, English-Japanese) reduce to morphology, in this case, the internal morphology of the WH-phrases. Still, the question arises why raising of the WH-operator is ever overt, contrary to Procrastinate. The basic economy of derivation assumption is that operations are driven by necessity: they are 'last resort', applied if they must be, not otherwise ... Our assumption is that operations are driven by morphological necessity: certain features must be checked in the checking domain of a head, or the derivation will crash. Therefore, raising of an operator to [Spec,CP] must be driven by such a requirement. The natural assumption is that C may have an operator feature (which we take to be the Q or WH feature standardly assumed in C in such cases), and that this feature is a morphological property of such operators as WH-. For an appropriate C, the operators raise for feature checking to the checking domain of C ([Spec,CP], or adjunction to specifier (absorption), thereby satisfying their scopal properties. ... If the operator feature of C is strong, the movement must be overt. ... If Watanabe is correct, the WH-operator feature is universally strong.

The discussion above would imply, in our terms, that the WH criterion applies universally at S-structure.

3.3.1.3. Radical Minimalism (Brody 1993).

Pursuing a Minimalist approach, Brody (1993) postulates one enriched syntactic representation from which both morphological spell out and LF are read off. To represent scope properties Brody uses abstract CHAINS. In (39a), for instance, the sentential scope of the WH-phrase *in situ* is represented by the expletive scope marker (SM) which is adjoined to the overt operator.

(39) a. when did you see whom?
b.



The scope of *whom* is determined by the non-overt SM with which it forms a CHAIN, the relation between the operator and *whom* is established by coindexation.

3.3.2. The NEG criterion.

Like the WH criterion the NEG criterion gives rise to overt movement of interrogative constituents. In some languages negative operators obligatorily move overtly in order to attain a specifier head relation with a negative head at S-structure. I will refer to the overt movement of the negative operator as NEG movement. (40) illustrates West Flemish (WF), a dialect of Dutch:

- (40) a. da Valère ketent me zen werk is
that Valère contented with his work is
b. *da Valère ketent me niets en-is
that Valère contented with nothing en-is
c. da Valère me niets ketent en-is
d. da Valère me niets nie ketent en-is

In (40a) the complement of the adjective *ketent* remains to its right. When the complement is negative it must move leftward, and will end up in a position preceding the negative marker *nie*, which I assume to be the WF equivalent of French *pas* and to occupy [Spec,NegP] at S-structure. The proposed negative constituents enter into an NC relation with each other and with *nie* (Haegeman 1991, Haegeman & Zanuttini 1991, in press).

Similar facts hold, for instance, for German (Hamann 1993)⁷ and for Afrikaans (Robbers 1992, 1993). Consider the distribution of the adjective *zufrieden* ('pleased') and its complement PP *mit seinem Auto* ('with his car') in German (41): the complement may follow the adjective (41a), it may precede it (41b) and it may be extraposed (41c).

- (41) a. weil Peter zufrieden mit seinem Auto ist
because Peter pleased with his car is
b. weil Peter mit seinem Auto zufrieden ist
because Peter with his car pleased is
c. weil Peter zufrieden ist mit seinem Auto
because Peter pleased is with his car

When the adjective takes a negative complement with sentential scope it always appears to the left of the adjective. In (42), the negative constituent takes sentential scope in (42a) and in (42c) the negative constituent has either narrow scope or it gets a denial reading.

- (42) a. weil Peter stolz auf niemanden/nichts ist
because Peter proud of no one/nothing is
b. weil Peter auf niemanden/nichts stolz ist
c. weil Peter stolz ist auf niemanden/nichts

Robbers (1993) offers a range of data from Afrikaans which confirm that there too the NEG criterion applies at S-structure. (43) is from Robbers (1993:3):

- (43) a. jy weet dat hy tevrede met Jan is
you know that he satisfied with Jan is
'you know that he is satisfied with Jan'
b. %jy weet dat hy tevrede met niemand is nie
you know that he satisfied with nobody is NEG (DENIAL READING)
c. jy weet dat hy met niemand tevrede is nie
you know that he with nobody satisfied is NEG
'you know that he isn't satisfied with anyone'

Not all languages have overt NEG movement at S-structure, though:

- (44) a. Jean n'a vu personne
Jean ne has seen no one
b. Gianni non ha visto nessuno
Gianni non has seen no one

⁷ Hamann's research is also supported by FNRS grant 11-33542.92

In both (44a) and (44b) the negative operators, *personne* and *nessuno*, do not have a specifier head relation with the negative head. In the literature it is proposed that the negative constituent moves to the negative head as LF, thus accounting for the well known subject-object asymmetries noted by Kayne (1975, 1984) for French and by Rizzi (1982) for Italian:

- (45) a. je n'exige que tu rencontres personne
I demand that you meet no one
b. *je n'exige que personne soit invité
I not ask that no one be invited
- (46) a. non pretendo che tu arresti nessuno
non I ask that you arrest no one
b. non pretendo che nessuno ti arresti (nessuno: *matrix scope)
non I ask that no one you arrest

In the earlier literature, it was proposed that *ne* or *non* act as scope markers for the negative constituent and trigger LF movement.⁸ In current terms the movement of the negative operators is enforced by the NEG criterion.

Given the discussion in section 3.2, the question arises how to interpret the cross linguistic variation with respect to NEG movement. One option is to assume that the level of application of the NEG criterion is parametrized, i.e. it applies at S-structure in WF, German and Afrikaans, and it applies at LF in Italian and French. In Haegeman (in press) I pursue an alternative proposal inspired by Brody (1993) in which the NEG criterion applies universally at S-structure and can be satisfied by operator CHAINS headed by non-overt scope markers. I refer the reader to Haegeman (in press) for theoretical and empirical motivations.⁹

3.4. Summary.

The above survey has shown that the current research in the domain of the syntax of negation focuses essentially on the following themes: the functional projection NegP as the locus of sentential negation, the licensing of the functional heads carrying abstract NEG features, the licensing of negative operators, and the relation between the negative head and the negative operators in the clausal domain, the position of the functional projection NegP within the clausal domain and in relation to other functional projections, especially TP, the

⁸ For very insightful discussion of negation in Spanish see Suñer (1993).

⁹ For an account which relates the syntax of negative constituents to their semantics, cf. Acquaviva (1992, 1993).

interaction between sentential negation and other constituents, notably the weak island effects due to intervening negation and the role of negation in the licensing of polarity items.

4. *The papers in this volume.*

In the last five years work on negation has been considerable; one can almost say that there has emerged a 'negation generation', a group of linguists working in the generative tradition who have analysed the various interactions of negation with the structure and interpretation of clauses in a wide range of languages. This volume is a collection of papers on negation written by some of those linguists. Each paper touches on a specific aspect of the syntax of negation, but even though the papers have a specific focus, their lines of enquiry converge around the issues which were seen to play a central role in the preceding research on negation.

Apart from the theoretical interest the papers also will be of interest from the empirical point of view. The papers offer a rich source of data, including detailed description of negation in languages as diverse as, among others, Irish variants of English (Duffield), Serbo-Croatian (Progovac, Rivero), Bulgarian (Rivero), Spanish, Italian, French and the Romance dialects (Zanuttini, Rivero), Arabic (Ouhalla), Basque (Laka), Hungarian (Puskas), and also including diachronic data (Pearce).

4.1. *The syntax of NegP.*

The syntactic encoding of sentential negation is specifically addressed in the papers by Laka, Pearce and Ouhalla.

Based on data from Basque Laka provides evidence for postulating a functional projection NegP whose head Neg hosts the inflected verb in negative sentences. As a result, the position of the inflected verb in non negative sentences (47a) differs from that in negative sentences (47b). In (47b) the auxiliary *da* has moved to Neg (*ez*).

- (47) a. Irune etorri da
Irune arrived has
'Irune has arrived'
b. ez da Irune etorri
not has Irune arrived
'Irune has not arrived'

Laka proposes also that in Basque NegP dominates the projections which compose the IP domain, while in English NegP dominates VP. The paper also postulates a close relation between Negation and Tense. I return to this point below.

Inspired by work on negation by Jespersen (1924:335), Pearce examines the cross linguistic variation in the realization of the negative head in terms of weakening and strengthening processes. When the head of NegP becomes weak (loss of stress and subsequent cliticization) it needs to be reinforced by the inclusion of an additional negative constituent. Jespersen (1924:335-6) illustrates the English developments as follows:

- (48) a. ic ne secge
b. ic ne seye not
c. I say not
d. I do not say
e. I don't say

In (48b) *ne* is reinforced by *not*. In (48c) *ne* is dropped and in (48e) *not* is weakened as evidenced by its reduction to *n't*.¹⁰

Ouhalla's contribution is concerned with the expression of negation in Arabic, both with the realization of the feature NEG, and with the instantiation of NegP. He shows that there are two negative markers in Standard Arabic: *maa*, which marks negative contrastive focus and interacts with focus phrases and WH phrases, and *laa*, which heads NegP and moves to T. Ouhalla's paper brings out the close parallels between negation and focus on the one hand, and negation and Tense on the other; the former point is also taken up by Puskas;¹¹ the latter by Laka.

Several papers in this volume address the licensing of functional heads.

Laka underlines the crucial role of tense in the licensing of the clausal functional projections and formulates the following condition:¹²

- (49) Tense C-command condition
Tense must c-command all inflectional heads at S-structure

Pursuing her earlier analysis of negation in the history of French (1991), Pearce's paper addresses the licensing of the negative head and proposes that there is a condition of NEG identification (Pearce: her (33)):

¹⁰ For the instantiation of (48) in Romance, cf. also Zanuttini (1989).

¹¹ Puskas's research is also supported by FNRS grant 11-35542.92.

¹² Zanuttini (in press) postulates a dependency between NegP and TP in order to express the absence of negated imperatives.

(50) Neg identification

- (i) NEG head is lexical (=strong); or
- (ii) NEG head is morphologically weak:
 - (a) NEG must be supported by T with lexical content; or
 - (b) NEG must be identified through Spec-head agreement with a lexical Neg operator.

Ouhalla proposes a general identification requirement for grammatical features:

- (51) Identification Requirement
the (abstract) features encoded in the functional heads of structural descriptions must be identified.

Underlying Ouhalla's principle is the idea that structural descriptions come specified with abstract features which serve as instructions to the performance systems (Chomsky 1993). For example, the feature [WH] encodes that a given structure is a WH-question, and the feature [+F] encodes contrastive focus. The Identification Requirement ensures that abstract features be recoverable from the surface strings. In his contribution Ouhalla specifically discusses the modes of identification of the Focus feature and of the NEG feature in Arabic.

4.2. NEG movement.

The relation between Focus, interrogative phrases and negation, which is highlighted in Ouhalla's contribution, is also prominent in Puskas' contribution. Puskas' article is written in the line of work developed by Rizzi (in press) and Haegeman and Zanuttini (1991) and discussed extensively in section 3.2, in which the parallels between the syntax of questions and the syntax of negative sentences are fully exploited. Pursuing her own earlier work on the relation between focus and WH-questions in Hungarian (1992), Puskas applies the NEG criterion to Hungarian, and shows that negative constituents undergo NEG movement to attain a specifier head relation with a negative head. She also shows that the NEG criterion can be satisfied either by a specifier head relation between the negative head *nem* itself, which has moved to Focus, and a negative operator in [Spec,FocusP], or alternatively by the trace of the negative head in Neg and an operator in [Spec,NegP]. The negative specifiers of the (moved) head *nem* and those of its trace enter into a Negative Concord relation.

4.3. The location of NEG.

In the generative tradition the abstract feature NEG is standardly associated with C or with AUX. Progovac's paper addresses this issue at greater length. Specifically she proposes that NEG may either be instantiated with INFL or with C, with differing semantic effects.

The effect of negation on the clause in which it appears is argued to depend crucially on its position in the clause. A negative marker within the local IP will exert its full influence on the clause, both semantically and syntactically. An IP-internal negation renders the sentence negative, it licenses negative polarity items (such as English *anyone*). Negation in Comp (or another pre IP-position) will only have an indirect semantic and syntactic impact on the complement IP. It renders the truth value of that clause indeterminate, i.e. neither positive nor negative, and it will only license negative polarity items which are non local. The effect of IP external negation is similar to that of superordinate negation, i.e. negation in a higher clause. The differences between the impact of a negative marker within IP and that outside it are shown to follow from minimality considerations: Progovac proposes that IP is the complete functional domain, or 'governing category' for negation. Negation outside local IP is negation outside the minimal domain.

4.4. Negation and the other functional heads.

The relation between sentential operators and tense is brought out in the discussion by Laka and by Ouhalla, as already mentioned above.

Duffield's contribution turns to a very interesting interaction between Negation and case licensing illustrated in data from Hiberno English. The starting point of his discussion is the ban on negative polarity items in the subject position in English matrix clauses:

- (52) a. Brendan couldn't believe it. *Anyone hadn't seen John
b. Brendan didn't believe that anyone had seen John
c. *anything could(n't) be done
d. there wasn't anything (there) that anyone could see (*anyone*= 'no one')
e. *there wasn't anything (there), as anyone could see (*anyone* : not = 'no one')
f. Patrick would give nothing to anyone
g. *Patrick would give anything to no-one

The standard explanation for (52) is expressed in terms of a c-command condition on the licensing of negative polarity items by a negative operator at S-structure (cf. Progovac 1988, 1991; Laka 1990). Since the canonical subject position is not c-commanded by the negative head in English matrix clause the ungrammaticality of the

relevant examples of (52) follows. Duffield elaborates the licensing condition on negative polarity items and applies it (among other things) to the following data from Hiberno English where, paradoxically, the negative polarity item is licensed in the canonical subject position.

- (53) a. although anybody don't seem to like to live in Russia (Duffield's (15b))
 b. now, anything is no sin (his (15c))

Duffield proposes the following licensing condition on negative polarity items:

- (54) Case condition
 For a Negative Polarity Item to be properly licensed, at least one Case-marked member of the NP1-chain must be c-commanded by a Negative Operator

Duffield proposes that the nominative subject in (53a) is licensed in [Spec,TP], i.e. a position c-commanded by Neg. The paper offers a very detailed description of the data and shows convincingly that there is good independent evidence that in Hiberno English [Spec,TP] is a case position. In order to accommodate examples like (53b) Duffield proposes that (54) applies at LF.

4.5. Negation and Mood.

In the literature some attention has been paid to the relation between syntactic Mood and negation. One illustration is given in section 3.1.3. above: Pollock (1993) proposes that NegP is dominated by MoodP.

There is also an important interaction between sentential negation and imperatives. This issue is addressed in the contributions by Rivero and by Zanuttini. Both authors point out the important contrasts between 'true imperatives', i.e. verbal forms with a unique imperative inflectional morphology, and 'surrogate' imperatives (Joseph & Philippaki-Warbuton 1987 and Rivero in press), verb forms which are used as imperatives but whose inflectional morphology coincides with that of another paradigm, such as the subjunctive or the infinitive. Consider (55), (Zanuttini's (1) and (5)):

- (55) a. telefona!
 call
 b. *non telefona!
 not call
 c. telefonate!
 call (Imperative 2pl, also indicative)
 d. non telefonate!
 not call

Rivero's earlier work (in press) discusses the syntax of imperatives in the Balkan languages, Bulgarian, Modern Greek, and Romanian. Her contribution to this volume develops her earlier work and discusses the contrast between imperatives in Castilian Spanish on the one hand, and Bulgarian and Serbo-Croatian on the other. She proposes the imperative feature (IMP) is encoded on C in Romance languages and in Modern Greek, forcing the imperative verb to move there, while in Bulgarian and Serbo-Croatian, on the other hand, IMP is located lower, hence imperative forms of the verb need not move to C. The incompatibility of true imperatives with pre-verbal negation is interpreted in terms of the blocking effect of the negative marker on the V-to-C movement. In surrogate imperatives V-to-C is optional. As the verb can stay lower in the structure than Neg, the negative head need not have a blocking effect.

Zanuttini (this volume) on the other hand suggests that the difference between true imperatives and surrogate imperatives derives from the clausal architecture: true imperatives have an impoverished structure compared to surrogate imperatives. Pursuing the theory of syntactic structure developed by Kayne (in press), she reformulates her earlier analysis (Zanuttini in press) in which she proposed that true imperatives lack TP, and proposes that true imperatives lack a sufficient number of functional projections to host both the imperative V and the negation. From Rivero's contribution to the present volume she adopts the idea that surrogate imperatives do not move to the same position as true imperatives.

To underscore the importance of the imperative data to the discussion of sentential negation, let me give one illustration of the interaction between negation and imperatives in the Germanic languages. While in non-negative imperatives an object can be dropped, in negative imperatives object drop leads to ungrammaticality (Henk van Riemsdijk p.c.):

- (56) a. leg uit
 put out
 'explain'
 b. *leg niet uit
 do not explain

This contrast disappears in surrogate imperatives.

- (57) a. uitleggen
explain (infinitive)
b. niet uitleggen
not explain

5. Conclusion.

The contributions in this volume are written against the background of generative research in general and of generative research on negation in particular. The papers provide contributions both on the empirical level, making available a range of data which are important for the research, and on the theoretical level. The central issues addressed in the papers are the role of NegP in the clausal structure, specifically with respect to the realization and licensing of the negative head and its specifier, the interaction between the position of Neg and the sentential interpretation, and the interaction between NegP and the other functional projections of the clause such as MoodP and TP. I hope that these papers will also form the impetus to future research.

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