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Negation and Negative Dependencies

HEDDE ZEIJLSTRA

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General Preface

The theoretical focus of this series is on the interfaces between subcomponents of the human grammatical system and the closely related area of the interfaces between the different subdisciplines of linguistics. The notion of ‘interface’ has become central in grammatical theory (for instance, in Chomsky’s Minimalist Program) and in linguistic practice: work on the interfaces between syntax and semantics, syntax and morphology, phonology and phonetics, etc. has led to a deeper understanding of particular linguistic phenomena and of the architecture of the linguistic component of the mind/brain.

The series covers interfaces between core components of grammar, including syntax/morphology, syntax/semantics, syntax/phonology, syntax/pragmatics, morphology/phonology, phonology/phonetics, phonetics/speech processing, semantics/pragmatics, and intonation/discourse structure, as well as issues in the way that the systems of grammar involving these interface areas are acquired and deployed in use (including language acquisition, language dysfunction, and language processing). It demonstrates, we hope, that proper understandings of particular linguistic phenomena, languages, language groups, or inter-language variations all require reference to interfaces.

The series is open to work by linguists of all theoretical persuasions and schools of thought. A main requirement is that authors should write so as to be understood by colleagues in related subfields of linguistics and by scholars in cognate disciplines.

Every human language has a means of expressing negation, but the linguistic behaviour of negation can be complex, both within a language and across languages, often involving multiple negative elements that enter into dependencies with each other. In this major new work, Hedde Zeijlstra investigates a wide range of such dependencies in human language. He shows that the full range of linguistic dependencies that are attested outside of the domain of negation also appear within that domain, and weaves syntactic, semantic, and pragmatic theories of such dependencies into a unified approach to the linguistics of negative concord, quantification, polarity, and scope.

David Adger
Hagit Borer

List of Abbreviations

AA	Anti-Additive
AI	actuality inference
b-s	backward-shifted interpretation
BEI	beyond-expectation inference
CP	Complementizer Phrase
DA	Downward Agree
DE	Downward-Entailing
DN	Double Negation
DP	Determiner Phrase
EMNE	Emphatic Multiple Negative Expression
EPP	Extended Projection Principle
EXH	Exhaustifier
FCI	Free Choice Item
FFFH	Flexible Formal Feature Hypothesis
FI	Full Interpretation
f-s	forward-shifted interpretation
GB	Government and Binding
GPSG	Generalized Phrase Structure Grammar
HMC	Head Movement Constraint
HPSG	Head-driven Phrase Structure Grammar
[iEXH]	interpretable exhaustifier feature
[iF]	interpretable formal feature
[iNEG]	interpretable negative feature
IP	Inflectional Phrase
ISC	Immediate Scope Constraint
LB	Left Boundary
MC	Modal Concord
NC	Negative Concord
NI	Negative Indefinite
NM	Negative Marker
NPI	Negative Polarity Item
NQ	Negative Quantifier
NSI	Negative-Sensitive Item
OS	Old Saxonian
PPI	Positive Polarity Item
PTS	Perfect Time Span
QR	Quantifier Raising
RAH	Rich Agreement Hypothesis

RB	Right Boundary
sim	simultaneous interpretation
SNI	Surrogate Negative Imperative
SoT	Sequence of Tense
ST	Situation Time
TNI	True Negative Imperative
TT	Topic Time
UA	Upward Agree
[uF]	uninterpretable feature
[uNEG]	uninterpretable negative feature
[uT]	uninterpretable Tense feature
UTS	time span introduced by <i>until</i>
[uWh]	uninterpretable <i>Wh</i> -feature
VISH	VP-Internal-Subject-Hypothesis
[iWh]	interpretable <i>Wh</i> -feature

PART I

INTRODUCTION AND OUTLINE

1

Introduction

Negation and negative dependencies

1.1 Introduction

This monograph deals with the question of how the variety of negative dependencies that have currently been attested can be explained, and what the repercussions of such an explanation are for the syntax and semantics of negative elements, negative dependencies, and related phenomena. The central hypothesis is that, to the extent applicable to negation, all possible ways to encode grammatical dependencies (at lexical, syntactic, semantic, and pragmatic levels) are attestable in the domain of negative dependencies, unless these are ruled out independently, e.g. on functional, formal, or learnability grounds.

However, before properly introducing the research questions and hypotheses of this monograph in detail, it makes sense to first introduce the empirical phenomena at stake, leaving the presentation of these research questions and hypotheses to the next chapter. In the current chapter, I therefore introduce the most important notions in the study to negation and negative dependencies. I start by discussing key areas in the syntax and semantics of negative elements, including the distinction between sentential and constituent negation, the syntactic status of negative markers (NMs), and the locus of negation in the clausal spine. Next, I introduce the notion of Negative Polarity Items (NPIs) and briefly discuss in what terms they have been studied over the past decades. What is their exact distribution? What makes them have these distributional restrictions? And what is the exact syntactic, semantic and/or pragmatic relation between an NPI and its licensor? I conclude by introducing two more types of negative dependencies: Negative Concord (NC) and so-called Positive Polarity Items (PPIs).

A universal property of natural language is that every language is able to express negation, i.e., every language has some device at its disposal to reverse the truth-value of the propositional contents of a sentence. However, languages may differ to quite a large extent as to how they express this negation. Not only do languages vary with respect to the form of negative elements, but the position of negative elements is also subject to cross-linguistic variation. Moreover, languages also differ in terms of the number of manifestations of negative morphemes: in some languages, negation is realized by a single word or morpheme, in other languages by multiple morphemes.

The syntax of negation is intrinsically connected to the phenomenon of negative dependencies. In short, and leaving the formal discussion for later, NPIs are items whose distribution is limited to a number of contexts which, in some sense, all count as negative. NPIs surface in various kinds and may also vary in terms of the restrictions they impose on their licensing contexts and the types of licensing relations. Therefore, studying NPIs does provide more insight not only into the nature of such context-sensitive elements, but also into the syntax and semantics of negation itself. NPIs may find their mirror image in PPIs—items that are banned from contexts which, in one way or the other, are negative.

The distinction between negative elements and NPIs is not always that clear-cut. In many languages, negative indefinites (NIs), quite often referred to as neg-words (or, previously, n-words, after [Laka 1990](#)), appear to be semantically negative in certain constructions, while exhibiting NPI-like behaviour in other configurations. The same may also apply to NMs in some languages. Of course, this raises questions regarding what negative elements are, what elements that are polarity-sensitive are, and where the boundaries between the two lie. What is negation and what are negative dependencies?

This book will aim at formulating answers to these questions, and several more. However, before outlining which questions in the domain of negation and negative dependencies are currently in need of explanation, in this chapter, I first provide a brief theoretical and empirical overview of the most important relevant notions and insights in this domain. This will set the stage for the next chapter, which introduces the research questions and hypotheses that I will entertain in this monograph.

Section 1.2 deals with the syntax and semantics of NMs; Section 1.3 discusses the syntax and semantics of NPIs. Section 1.4 then, extends the discussion on negative dependencies to NC—i.e. the phenomenon where multiple instances of morphosyntactic negation yield only one semantic negation—and PPIs. Section 5, finally, concludes.

1.2 The syntax of sentential negation

In this section, I provide a brief overview of the range of variation that the expression of (sentential) negation cross-linguistically exhibits and of what its underlying syntax is. First, in Subsection 1.2.1, I introduce the (non-dichotomous) distinction between sentential and constituent negation, after which I continue by describing the range of variation that is cross-linguistically attested with respect to the expression of sentential negation (Subsection 1.2.2). Subsection 1.2.3 deals with the syntactic status of NMs, and, finally, in Subsection 1.2.4, their syntactic position in the clausal spine is discussed.

1.2.1 Sentential and constituent negation

Before discussing the various ways in which sentences can be made negative, one important distinction needs to be made. Take the following minimal pair, dating back to similar examples since (at least) [Jackendoff \(1972\)](#).

- (1) a. With no job is Kim happy
- b. With no job Kim is happy

Although both cases involve the same negative constituent (*with no job*), (1a) and (1b) crucially differ in their readings. Whereas (1a) denies Kim's happiness, (1b) entails it, albeit under special circumstances. Also syntactically, (1a) and (1b) are different, in the sense that (1a) triggers verbal movement to C°, whereas (1b) does not. Since, in (1a), the entire sentence is felt to be negative, and in (1b) only the PP *with no job*, it is said that (1a) constitutes an instance of *sentential negation*, whereas (1b) exhibits *constituent negation*.

[Klima \(1964\)](#) was the first to offer a number of diagnostics for sentential negation, such as (among others) continuations by positive question tags or *either*-phrases; sentences involving constituent negation, by contrast, can only be followed by negative question tags or *too*-phrases.

- (2) a. With no job is Kim happy, is/*isn't she?
- b. With no job Kim is happy, isn't/*is she?
- (3) a. With no job is Kim happy, and/or Mary either/*too
- b. With no job Kim is happy, and/or Mary too/*either

Klima's tests have invoked a number of criticisms. These criticisms initially concerned the diagnostics, though not the distinction between sentential and constituent negation itself. First, the criteria are language-specific and, therefore, do not naturally extend to other languages; second, Klima's tests also take semi-negative adverbs, such as *seldom* or *hardly*, to induce sentential negation (see (4)), even though inclusion of such elements does not reverse the polarity of the sentence: (4) does not deny that John drives a car.

- (4) John seldom drives a car, does he?

Finally, sentential negation and constituent negation do not always appear mutually exclusive. Take, for instance, (5):

- (5) Not every professor came to the party, did they?

Not every professor clearly forms a constituent (a negative DP). Although examples like (5) are often analysed as constituent negation (cf. [Payne 1985](#); [Cirillo 2009](#)), the diagnostics point in the direction of sentential negation. It is, thus, a question whether exhibiting constituent negation is actually incompatible with expressing

sentential negation. Rather, what seems to be the case is that sentential negation should be considered a scopal notion, rather than a notion purely in terms of syntactic structure. Then, (5) is simply an instance of constituent negation that is also able to express sentential negation.

Following a research tradition that essentially goes back to Jackendoff (1969, 1972), Lasnik (1975), and many others, Acquaviva (1997) argues that the notion of sentential negation should be defined in semantic rather than in syntactic terms (see also Penka 2011). Specifically, Acquaviva argues that sentential negation is the result of negating the quantifier that binds the event variable. In terms of neo-Davidsonian event semantics (Davidson 1967; Parsons 1990), representations of sentential negation must be represented along the lines of (6):

- (6) John didn't drive
 $\neg\exists e[\text{drive}(e) \ \& \ \text{Agent}(j, e)]$

Currently, most scholars treat sentential negation à la Acquaviva (cf. Herburger 2001; Zeijlstra 2004; Penka 2007, 2011). Note, though, that adopting this kind of perspective on sentential negation does not necessarily preclude the validity of syntactic approaches to the analysis of sentential negation, as it is generally assumed that existential closure of a predicate containing an event variable takes place at the level of the vP boundary (cf. Diesing 1992; Ladusaw 1992; Herburger 2001; Zeijlstra 2004, 2008a; Penka 2007, 2011). This also means that sentential negation and constituent negation are not dichotomous; sentential negation results from a particular kind of constituent negation, namely negated constituents that at least involve the vP.

1.2.2 Ways of expressing sentential negation

The distinction between sentential and constituent negation paves the way for one of the central questions that this chapter is about: what are the syntactic properties of the expression of sentential negation, or, to be more precise, of the NMs that give rise to sentential negation?

Languages exhibit a fair amount of cross-linguistic variation with respect to the way sentential negation is expressed. However, closer inspection reveals some remarkable correspondences as well. Let me discuss two of them.

First, as has been noted by Horn (1989) in his seminal work on negation, the expression of a negative sentence is always marked in comparison to its affirmative counterpart. There is no language in the world in which affirmative sentences are marked and negative ones are not (see also Dahl 1979; Payne 1985). In this respect, negative and affirmative sentences are not symmetric in natural language, but rather asymmetric in nature (for a discussion on this asymmetric view on the positive–negative distinction, see also Ladusaw 1996).

Second, various strategies for expressing negation turn out to be universally absent. For instance, no language in the world is able to express negation solely by means of word order shift, a strategy that is often exploited to express other grammatical categories, such as interrogatives (cf. Horn 1989; Zeijlstra 2009).¹

This leaves open a syntactically limited set of possible expression strategies: sentential negation must be expressed overtly (i.e., it cannot be left unspecified), and marking cannot occur as a result of mere remerge (visible due only to a word order shift). This means that every instance of sentential negation must be expressed by some negatively marked, overt element, with variation lying only in the type, position, and number of such markers.²

Elaborating on Zanuttini's (2001) state-of-the-art overview, three major classes of negative elements expressing sentential negation can be identified. The first class of strategies concerns negative verbs. In languages like Evenki (a Tungusic language spoken in Eastern Siberia), special auxiliaries can negate a sentence. Alternatively, in many Polynesian languages (e.g., Tongan), negative verbs even select an entire clause (in a way similar to the English *it is not the case that ...*-construction). Examples are shown in (7).^{3,4}

- (7) a. Bi ∂ - ∂ -w dukuwün-ma duku-ra (Evenki)
 I NEG-PAST-1SG letter-OBJ write-PART
 'I didn't write a letter'
 b. Nāe 'ikai [_{CP} ke 'alu 'a Siale] (Tongan)
 ASP NEG [ASP go ABS Charlie]
 'Charlie didn't go'

The second class of expression strategies is constituted by languages that make use of NMs which participate in the verbal inflectional morphology. An example is Turkish, where sentential negation is expressed by means of the negative morpheme *me*, which is located between the verbal stem and the temporal and personal inflectional affixes.

- (8) John elmalari sermedi (Turkish⁵)
 John apples like.NEG.PAST.3SG
 'John didn't like apples'

¹ Note, though, that this does not mean that the word order in an affirmative sentence is always the same as in a negatively marked sentence (see Laka 1990 for examples from Basque).

² There has been reported one type of exception in the literature. In Dravidian languages, negation can be marked through omission of a tense marker for affirmation, arguably an instance of an overt reflex (as a result of impoverishment) by the presence of a covert NM (see only Van der Auwera and Krasnoukhov 2020) for a discussion and literature overview of such cases.

³ Data from (Payne 1985), cited in Zanuttini (2001).

⁴ For many more examples of negative auxiliaries, see Miestamo (2005).

⁵ Example from Ouhalla (1991), also cited in Zanuttini (2001).

The final class of expression strategies exploits negative particles to express sentential negation. Negative particles come about in different forms. Following Zanutini (1997, 2001) and Zeijlstra (2007), one can distinguish the following two kinds of negative particles: NMs that attach to the finite verb, and those that do not.

The first type of these negative particles consists of NMs that, when expressing sentential negation, must be attached to the finite verb. This type of negative particle has been referred to by Zanutini (1997) among others as *preverbal negative markers*, as these NMs generally left-attach to the finite verb. Czech *ne* and Italian *non* are two examples:

- (9) a. Milan *nevolá* (Czech)
 Milan NEG.calls
 ‘Milan doesn’t call’
 b. Gianni *non* ha telefonato (Italian)
 Gianni NEG has called
 ‘Gianni didn’t call’

In both examples, the NM shows up in a position to the immediate left of the finite verb (V_{fin}). It must be noted, though, that these markers exhibit different morphophonological behaviour. Italian *non* is a separate morphological word, which, for syntactic reasons, precedes the finite verb, whereas, in Czech, the NM seems to be affixed to V_{fin} . The examples in (9) thus show that this first class of these negative particles is not homogeneous.⁶

The second class of negative particles is characterized by the fact that, in contrast to those of the first class, their syntactic position does not depend on the surface position of the (finite) verb. Movement of V_{fin} does not trigger displacement of the NM. In this respect, the distributional position of these NMs is similar to that of aspectual adverbs, as is shown for German *nicht* (‘not’) and *oft* (‘often’) in (10) and (11).

- (10) a. Hans kommt *nicht* (German)
 Hans comes NEG
 ‘Hans doesn’t come’
 b. ... dass Hans *nicht* kommt
 ... that Hans NEG comes
 ‘... that Hans doesn’t come’

⁶ Cf. Zanutini (1997) for a more fine-grained overview of different kinds of preverbal NMs based on a survey of Romance microvariation (mostly Northern Italian dialects), including a comparison between preverbal NMs and other clitics. See also Poletto (2008) for a further refinement.

- (11) a. Hans kommt *oft* (German)
 Hans comes often
 ‘Hans often comes’
 b. ... dass Hans *oft* kommt
 ... that Hans often comes
 ‘... that Hans often comes’

A final remark needs to be made about the occurrence of multiple NMs. Many languages seem to allow more than one NM to appear in negative clauses. Catalan, for example, has, apart from its preverbal negative particle *no*, the possibility of including a second additional negative particle *pas* in negative expressions. In Standard French, the negative particle *pas* must even be accompanied by a preverbal negative particle *ne*.⁷ In West Flemish, finally, the negative particle *nie* may optionally be joined by a negative particle *en* that attaches to the finite verb (12).⁸

- (12) a. *No* serà (*pas*) facil (Catalan)
 NEG be.FUT.3SG NEG easy
 ‘It won’t be easy’
 b. Jean *ne* mange *pas* (French)
 Jean NEG eats NEG
 ‘Jean doesn’t eat’
 c. Valère (*en*) klaapt *nie* (West Flemish⁹)
 Valère NEG talks NEG
 ‘Valère doesn’t talk’

Jespersen (1917) observed that examples like the ones in (12) reflect a widespread cyclic development of languages. Languages like English, Dutch, Latin, and many others all went from a stage with only a clitic-like NM through intermediate stages as in (12a–c) to a stage in which negation is expressed only by means of a postverbal NM. This process is known as *Jespersen’s Cycle* (after Dahl 1979) and has been formulated by Jespersen as follows:

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 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.

(Jespersen 1917: 4)

⁷ In colloquial French, though, this NM *ne* is often dropped.

⁸ Another well-studied language that exploits multiple NMs to express sentential negation is Tamazight Berber (cf. Ouhalla 1991; Ouali 2005).

⁹ Example taken from Haegeman (1995).

A number of analyses have been presented to account for the range of variation that is attested cross-linguistically (both synchronically and diachronically) with respect to the expression of sentential negation, a number of which will be discussed in this monograph as well (in Chapters 4 and 6). However, it must be noted that this range of variation is not unique to negation. It shows close resemblance to, for instance, the range of variation that tense, aspect, and mood markers exhibit, as well as their similar diachronic developments (cf. Hopper and Traugott 1993; Roberts and Roussou 2003; Van Gelderen 2009).

1.2.3 On the syntactic status of negative markers

The question now arises of what the exact syntactic status is of the different types of negative particles that have been discussed, and to what extent they can be analysed in formal syntactic terms.

Pollock (1989), basing himself on an intensive study of the distinction between French auxiliaries and lexical verbs, argues that negative particles, such as French *ne* and *pas*, are base-generated in a particular functional projection, dubbed NegP, that intervenes between TP and AgrSP. The finite verb, on its way to T°, then picks up the NM *ne*, leaving *pas* behind in its specifier position.

- (13) [TP Jean ne-mange-s [NegP pas ne-mange [AgrSP mange [VP mange]]]]

The idea that NMs are hosted in some functional projection in the clausal spine has strongly shaped the study of the syntactic status of NMs, the primary question being which particles may head such a negative phrase and which ones may not.

Zanuttini (1997, 2001) already applies a number of diagnostics to prove that those markers that always show up in the proximity of the finite verb are syntactic heads that have the entire vP in their complement. One such diagnostic concerns clitic climbing. In (14b), it can be seen that the presence of the French NM *ne* blocks movement of the clitic *la* from a position within an infinitival complement of a causative verb to a position adjoining the matrix auxiliary. The example in (14c) makes clear that this blocking effect is due to the intervening clitic-like NM *ne*, as clitic movement over *pas* is not illicit.¹⁰

¹⁰ Zanuttini follows Kayne (1989) by arguing that this must be due to *ne* being an intervening head blocking antecedent government of the trace, although this analysis does not crucially rely on Kayne's explanation, as, in other frameworks, intervening heads are also taken to interfere with clitic movement as well (see Pollock 1989; Travis 1984).

- (14) a. Jean la₁ fait manger t₁ à Paul (French¹¹)
 Jean it makes eat to Paul
 ‘Jean makes Paul eat it’
 b. *Jean l₁’a fait *ne pas* manger t₁ à l’enfant
 Jean it.has made NEG NEG eat to the child
 ‘Jean has made the child not eat it’
 c. Jean *ne* l₁’a *pas* fait manger t₁ à Paul
 Jean NEG it.has NEG made Paul eat it
 ‘Jean hasn’t made Paul eat it’

Another diagnostic, presented in Zanuttini (1997), also concerns blocking of verb movement. Paduan, an Italian dialect from Veneto, requires the C° head to be overtly filled in yes/no interrogatives.¹² In positive interrogatives, the verb moves from V° to C°. As a consequence of the Head Movement Constraint (HMC) (Travis 1984), such movement would be illicit if another overtly filled head intervened. Hence, if the Paduan NM *no* is an intervening head, V-to-C movement is predicted to be excluded in Paduan yes/no interrogatives. This prediction is indeed borne out, as shown in (15).

- (15) a. Vien-lo? (Paduan)
 comes-he?
 ‘Is he coming?’
 b. *Vien-lo *no*?
 comes-he NEG?
 ‘Isn’t he coming?’

Zanuttini’s account that those negative particles that attach to the finite verb must be heads of some functional projection in the clausal spine is further proved by Merchant (2006a), who developed another diagnostic: the so-called *why not* test. Merchant argues that the English *why not* construction must be analysed as a form of phrasal adjunction; therefore, it is predicted that this construction is allowed in only those languages in which the NM is phrasal as well, and thus forbidden for NMs that occupy a functional head in the clausal spine.

- (16) [_{XP} [_{XP} why] [_{YP} not]]

As Merchant shows, this prediction is borne out for many of the languages with a negative particle, illustrated by examples from Italian *non* and Greek *dhen* (17):

¹¹ Examples (14a–b) are from Kayne (1989), cited in Zanuttini (2001).

¹² Cf. Benincà and Vanelli (1982); Poletto (2000); Poletto and Pollock (2001).

- (17) a. *Perche *non*? (Italian)
 b. *Giati *dhen*? (Greek)
 why NEG
 ‘Why not?’

In those languages, in order to express something meaning ‘why not’, a negative polar particle (like ‘no’ as in ‘yes/no’) must be used:

- (18) a. Perche *no*? (Italian)
 b. Giati *oxi*? (Greek)
 why NEG
 ‘Why not?’

This observation holds for all languages where the NM itself is not taken to be phrasal, except for those languages where the NM is phonologically identical to the negative polar particle, as is the case in, for instance, Spanish and Czech.

- (19) a. ¿Porqué *no*? (Spanish)
 b. Proč *ne*? (Czech)
 why NEG/no
 ‘Why not?’

The three discussed diagnostics all show that those negative particles that attach to the finite verb must be syntactic heads within the clausal spine.

It is only natural, then, to assume that those negative particles whose sentential position is in principle independent of the surface position of the verb should be taken as phrasal elements, i.e., not as elements occupying a head position in the clausal spine (leaving open the question whether these elements are then specifiers of NegP or not). This assumption indeed appears to be correct.

If negative adverbs are XPs, they should not block head movement and ‘why not’ constructions should be acceptable.¹³ Both predictions are correct. V-to-C languages like Dutch, German, or Swedish exhibit V2 in main clauses. This implies that the verb has to move over the negative adverb to C° in a negative sentence, as is shown for Dutch and Swedish below and has been shown for German already in (10):

- (20) a. ... om Jan *inte* köpte boken (Swedish)
 ... that Jan NEG bought books
 ‘... that John didn’t buy books’
 b. Jan köpte *inte* boken
 Jan bought NEG books
 ‘Jan didn’t buy books’

¹³ Though it should be noted that these diagnostics are less straightforward under remnant movement approaches to verb movement (cf. Nilsen 2003; Müller 2004; Bentzen 2007), a result of the fact that remnant movement approaches in general are vulnerable to overgeneration.

- (21) a. ... dat Jan *niet* liep (Dutch)
 ... that Jan NEG walked
 ... 'that Jan didn't walk'
 b. Jan liep *niet*
 Jan walked NEG
 'Jan didn't walk'

From these results, it follows that the negative adverbs in (20)–(21) behave like maximal projections. It is then also expected that these elements are allowed to adjoin to 'why' in the 'why not' constructions. This expectation is confirmed as well, as shown in (22), taking into account that, in these languages, negative polar particles (*no* in English, *nein* in German, *nee* in Dutch, *nej* in Swedish) are indeed different from NMs.

- (22) a. Why *not*? (English)
 b. Warum *nicht*? (German)
 c. Waarom *niet*? (Dutch)
 d. Varför *inte*? (Swedish)
 why NEG?
 'Why not?'

To conclude, the distinction between the two types of negative particles can be naturally reduced to a distinction in syntactic phrasal status.

The next question to arise then is whether NMs that are instances of the verbal morphology—such as the Turkish NM *me*, which precedes tense, mood, and person affixes, and follows reflexive, causative, or passive affixes—are fundamentally different from markers that attach to V_{fin} . Can it be the case that they are both base-generated in some Neg° position in the clausal spine and differ only with respect to their morphophonological properties? This question is not restricted to the realm of NMs, but concerns the comparison between inflectional and non-inflectional morphemes in general. Traditionally, inflected verbs had been considered to be the result of a head movement process where the verb 'picks up' its affixes (cf. Baker 1985; Pollock 1989). In this sense, the underlying syntactic structure of sentences with a non-phrasal negative particle and an inflectional NM may be identical.

Such a view (present, for instance, in Pollock 1989) is, however, currently disputed, casting doubt on the idea that inflectional NMs are plain syntactic heads, and has been replaced by either lexicalist positions, where lexical items enter the derivation fully inflected (cf. Chomsky 1995a, et seq.), or distributed-morphology-based positions, where the formal features in the verbal tree are postsyntactically spelled out as either inflectional morphemes or separate words (cf. Halle and Marantz 1993, and subsequent work). Under lexicalist approaches, inflectional markers must be different from syntactic heads; other approaches refute the idea that inflectional markers are fundamentally different from syntactic heads: they are only the result of different mechanisms in the spell-out process. But even under

lexicalist approaches, the presence of an inflectional morpheme is connected to a corresponding syntactic head to which the inflectional morpheme stands in an Agree relation. Thus, in principle, nothing stands in the way of a unified treatment of non-phrasal negative particles and inflectional NMs (i.e., all NMs whose sentential position is dependent on the position of the finite verb) in terms of elements occupying some head position in the clausal spine.

1.2.4 On the syntactic position of negative markers

The fact that NMs can be heads of a particular functional projection (known as NegP) leads to two further questions: (i) what is the syntactic position of this NegP with respect to other functional projections in the clausal spine; and (ii) is this negative projection also present in languages that lack an (overt) negative head, or do these phrasal NMs occupy specifier/adjunct positions of other projections?

Pollock (1989) proposed that NegP is located below TP and above Agr(S)P, but the exact position of negation within the clausal spine has been the subject of quite extensive discussion (cf. Belletti 1990; Laka 1990; Zanuttini 1991; Pollock 1993; Haegeman 1995, among many others).

Most of these proposals point out that nothing a priori forces the position of the negative projection to be universally fixed. Ouhalla (1991), for instance, shows that, in Turkish, negative affixes are in between the verb and tense affixes, whereas, in Berber, negation is in the outer layer of verbal morphology, as is shown in (23).¹⁴

- (23) a. *Ur-ad-y-xdel Mohand dudsha* (Berber¹⁵)
 NEG.FUT.3MASC.arrive Mohand tomorrow
 ‘Mohand will not arrive tomorrow’
 b. *John elmalar-i ser-me-di* (Turkish)
 John apples like.NEG.PAST.3SG
 ‘John didn’t like apples’

Assuming that both inflectional NMs are hosted at Neg°, Ouhalla argues that the position occupied by NegP in the clause is subject to parametric variation along the lines of his *NEG Parameter* (24), which puts NegP either on top of TP or on top of VP.

- (24) NEG Parameter
 a. NEG selects TP
 b. NEG selects VP

According to Ouhalla, the different values of this NEG Parameter are also reflected by the differences in the expression of sentential negation in Romance languages

¹⁴ See also Ouali (2005) for a discussion of Berber negation.

¹⁵ Example taken from Ouhalla (1991).

and Germanic languages. For him, in Romance languages, NegP dominates TP, while it does not do so in Germanic languages.¹⁶

The idea that the position of NegP is more flexible than initially suggested by Pollock (1989, 1993) was further adopted by Zanuttini (1991, 1997). She claims, much in line with the later cartographic approach initiated by Rizzi (1997) and Cinque (1999), and basing herself on various Italian dialect data, that different NMs in Romance varieties may occupy different positions in the sentential structure, and that, universally, at least four different NegPs are available (see also Benincà 2006; Poletto 2000, 2008; Manzini and Savoia 2005 for a discussion of negation in various Italian dialects):¹⁷

- (25) [NegP1 [TP1 [NegP2 [TP2 [NegP3 [AspPperf [Aspgen/prog [NegP4]]]]]]]]

Zanuttini's proposal has met serious criticisms. While her proposal is essentially right in arguing that more positions should be available for NMs, she does not make clear why these positions have to be the result of a universal syntactic template. The fact that the distribution of negation appears to be richer than a fixed NegP position suggests does not necessarily constitute an argument in favour of an even more fine-grained fixed structure. It might just as well indicate that the syntactic distribution is relatively free and constrained only by independently motivated syntactic or semantic restrictions.

This is essentially the argument which I put forward in Zeijlstra (2004, 2013a) and which I will defend in this monograph. I argue that the minimal (semantic) requirement for an NM to express sentential negation is that it outscopes vP to ensure that sentential negation is yielded (see Section 2.1), and that this constraint determines the cross-linguistic range for variation. Similarly, Zeijlstra (2006, 2013a), following Han (2001), argue that negation may never be interpreted in a position at least as high as C° in main clauses (as, otherwise, negation would outscope operators with the illocutionary force of a speech act; see Chapter 15). These two assumptions thus require NMs to occupy a position somewhere in the syntactic middle field without alluding to any syntactic principle except the one after May (1977) that states that semantic scope reflects syntactic structure. Finally, I argue that semantic differences between different positions (or types) of NM should also follow from differences in scopal effects, i.e., the syntactic position of an NM is (relatively) free, but if the NM is included in different positions, different semantic effects are expected to arise (see also Ramchand 2004).

This line of reasoning is in line with a series of approaches put forward by (among others) Ernst (2001), Svenonius (2001), and Nilsen (2003), who argue that, generally, the fixed orders of adverbials, arguments, discourse particles, etc.

¹⁶ Haegeman (1995), however, argues that, at least in West Flemish, NegP is located between AgrP and TP.

¹⁷ It must be noted, though, that Cinque (1999) excludes negation from the adverbial hierarchy because of its freer distribution.

do not reflect a prefabricated syntactic template, but rather result from the fact that alternative orders would lead to semantic anomaly. Consequently, following the anti-cartographic nature of these approaches (mostly notably [Nilsen 2003](#)), while negative head markers must head a NegP of their own, negative specifiers do not necessarily do so. For languages like Dutch and German, I assume that their adverbial NMs (*niet* and *nicht*, respectively) occupy adjunct positions of vP, and that a negative projection NegP is altogether lacking in the clausal spine.

This more flexible analysis of the sentential locus of negation and NMs has been adopted by [Penka \(2007, 2011\)](#), [Cirillo \(2009\)](#), [Breitbarth \(2009\)](#), and also [Haegeman and Lohndal \(2010\)](#), who correctly argue that a serious consequence of this approach is that only NMs may occupy a Neg° position. As obvious as this may sound, closer inspection reveals that this has a serious consequence for the analysis of NMs that cannot express sentential negation without additional support by another NM, as illustrated in (12b–c) and repeated here as (26a–b).

- (26) a. Jean *ne* mange *pas* (Standard French)
 Jean NEG eats NEG
 ‘Jean doesn’t eat’
 b. Valère (*en*) klaapt *niet* (West Flemish)
 Valère NEG talks NEG
 ‘Valère doesn’t talk’

As Breitbarth and Haegeman and Lohndahl observe, West Flemish *en* is never able to render a sentence negative by itself.¹⁸ It is only optionally available in sentences that have already been made negative by other overt negative elements. For that reason, *en*, strictly speaking, cannot be taken to carry some negative feature, which could, in turn, project Neg°. Instead, they argue that *en* carries a weak polarity feature that constitutes a Polarity Phrase (PolP). Similar arguments have been proposed for the Afrikaans sentence-final NM *niet* ([Oosthuizen 1998](#); [Biberauer 2008](#); Chapter 4 of this book) and French *ne* ([Zeijlstra 2010a](#); see also Chapter 4). For the latter, [Zeijlstra \(2010a\)](#) argues, however, that French *ne*, being an element that may only survive in (semi-)negative contexts without contributing any semantic negation, should actually be considered a plain NPI and not the head of any PolP. One of the reasons for rejecting the existence of PolPs alongside NegPs is that negative clauses are always marked—the morphosyntax of negative and positive clauses is not the same (as would be the case with PolPs; see [Horn 1989](#)), and the scope of polarity always coincides with the surface position of the (highest) NM, not the alleged position of Pol°.

¹⁸ Except for a small number of fixed constructions, such as ‘*k en weet* (I en know ‘I don’t know’) in Ghent Dutch (cf. [Haegeman 1995](#)); see also Chapter 8 for similar cases involving French *ne*.

1.3 Polarity-sensitivity

The previous section has illustrated already that the expression of sentential negation is subject to a number of both syntactic and semantic constraints.

However, the syntax and semantics of negation is not restricted to the syntax of NMs and other negative elements only. As has already briefly been touched upon at the end of the previous section, some elements do not induce semantic negation by themselves, but rather only survive in contexts that, in one way or the other, are negative. Elements that form such negative dependencies are generally referred to as NPIs, although other names surface as well (e.g. Affective Items; cf. [Giannakidou 1999](#)).

The best-known examples of NPIs are formed by the English *any*-series, although many more can be given, e.g. English *yet*, *need*, *either*, or *lift a finger*:

- (27) a. We *(didn't) read *any* books
 b. I have*(n't) been there *yet*
 c. I *need**(n't) do that
 d. I *(didn't) read the book, and John *(didn't) *either*
 e. Nobody/*somebody *lifted a finger*

NPI-hood is, however, not restricted to English. To the best of my knowledge, all languages have some NPIs at their disposal (see also [Haspelmath 1997](#) for a non-exhaustive list of languages that display NPIs), and many languages exhibit a typology of NPIs, often at least as rich as that of English.

As has been pointed out by [Giannakidou \(1999\)](#), the term 'NPI', in the most literal sense, is actually a misnomer, as most NPIs are licensed in contexts that are, strictly speaking, not negative, such as restrictive clauses of universal quantifiers, yes/no questions, or contexts introduced by *at most N* constructions or semi-negative adverbs, such as *hardly*.

- (28) a. Every student who knows *anything* about linguistics will join the event
 b. Do you want *any* cookies?
 c. At most three students did *any* homework
 d. Mary hardly likes *any* cookies

NPIs have received wide attention by scholars in syntax, semantics, and pragmatics, and they have constituted a fruitful and popular research area over the past 30 years. As [Ladusaw \(1996\)](#) points out in his seminal overview article, the study of the behaviour of NPIs has been dominated by four research questions: (i) the licenser question; (ii) the licensee (relation) question; (iii) the licensing (relation) question; and (iv) the status question.

The *licenser question* aims at determining what counts as a proper NPI licensing context. The *licensee question* seeks an answer to the question why certain elements are only allowed to occur in particular contexts and what distinguishes them

from polarity-insensitive elements. The *licensing (relation) question* addresses the question of what kind of constraints the relation between the NPI licenser and its licensee is sensitive to. Finally, the *status question* addresses the status of sentences containing unlicensed NPIs: are such sentences bad for syntactic, semantic, and/or pragmatic reasons?

In Zeijlstra (2013b), I argued that this status question is tightly connected to the licensee question. If it is, for instance, a syntactic property of NPIs that they require a higher negative(-like) element, then a sentence containing an unlicensed NPI is syntactically ill-formed; on the other hand, if NPIs come along with a pragmatic effect that causes them to only be felicitously uttered in negative(-like) contexts, then, by contrast, a sentence containing an unlicensed NPI may still be grammatical. The four questions thus reduce to three core questions. In Subsections 1.3.1–3, I discuss these three questions, which have guided the study to negative dependencies over the past three decades, before addressing what questions are currently at stake.

1.3.1 The licenser question

As the examples (27)–(28) show, NPIs are licensed only in particular contexts, some truly negative, some not. The question thus arises as to what properties constitute NPI-licensing environments.

The first and still one of the most important and influential accounts that tries to reduce all NPI-licensing contexts to one single semantic property is Ladusaw's (1979) proposal, based on Fauconnier (1979), that all NPI licensers are Downward Entailing (DE), where DE is defined as follows (taken from von Stechow 1999):

- (29) A function f of type $\langle \sigma, t \rangle$ is Downward Entailing iff for all x, y of type σ such that $x \Rightarrow y$, $f(y) \Rightarrow f(x)$

To illustrate what is meant here, let us look at the examples in (30) and (31). In (30a), the first sentence entails the second one, but not the other way round (30b). This is due to the fact that the set of red shirts is a subset of the set of shirts. The entailment goes from a set to its supersets.

- (30) a. Mary is wearing a red shirt \Rightarrow Mary is wearing a shirt
 b. Mary is wearing a shirt $\not\Rightarrow$ Mary is wearing a red shirt

In DE contexts, entailment relations are reversed. This is shown for the negative contexts in (31), where the only valid inferences are now from a set to its subsets.

- (31) a. Nobody is wearing a red shirt $\not\Rightarrow$ Nobody is wearing a shirt
 Nobody is wearing a shirt \Rightarrow Nobody is wearing a red shirt
 b. John is not wearing a red shirt $\not\Rightarrow$ John is not wearing a shirt
 John is not wearing a shirt \Rightarrow John is not wearing a red shirt

However, DE-ness is not restricted to negative contexts. Also, the first (but not the second) argument of a universal quantifier, semi-negatives such as *few*, and *at most N* constructions are DE and license NPIs.

- (32) a. Every student went to bed \Rightarrow Every linguistics student went to bed
 b. Few people sing \Rightarrow Few people sing loudly
 c. At most three students left \Rightarrow At most three students left early

Although this proposal is to be considered a milestone in the study of NPIs, it faces several serious problems as well, as has often been addressed in the literature (see the following detailed discussions for references). The three most important ones are the following: (i) not every NPI is licensed in the same sets of DE contexts; (ii) some NPIs can be licensed in non-DE contexts as well; and (iii) successful NPI licensing does not necessarily depend only on the logico-semantic properties of the NPI-licensing context.

With respect to (i), it can be observed that some NPIs are subject to different licensing conditions from others. For instance, while English *any* terms seem to be fine in all DE contexts, the Dutch counterpart to *any*, i.e., *ook maar*, is ruled out in DE contexts like *niet iedereen* ('not everybody'):

- (33) a. Nobody / not everybody ate *anything*
 b. {Niemand / *niet iedereen} heeft *ook maar iets* gegeten (Dutch)
 nobody / not everybody has PRT something eaten
 'Nobody / not everybody ate anything'

Van der Wouden (1994), elaborating on Zwarts (1995), argues that DE should be thought of as some layer of a negative hierarchy, where the true negation (*not*), subject to all De Morgan laws, is Anti-Morphic, as defined in (34), and forms the highest layer of the negative hierarchy.

- (34) A function f is Anti-Morphic iff $f(A \vee B) \Leftrightarrow (f(A) \wedge f(B))$ and $f(A \wedge B) \Leftrightarrow (f(A) \vee f(B))$.

English *not* is Anti-Morphic since *John doesn't dance or sing* means that John does not dance and John does not sing, and *John doesn't dance and sing* means that John does not dance or John does not sing. *No student*, by contrast, is not Anti-Morphic: if some students dance but do not sing, and if all other students sing but do not dance, it is still the case that no student sings and dances, but the second conjunct in (34) does not hold for *no student*.

No student belongs in the next layer of the negative hierarchy, which consists of so-called Anti-Additive (AA) elements, formally defined as in (35). These are elements like *nobody*, *nothing*, *no*.

- (35) A function f is Anti-Additive iff $f(A \vee B) \Leftrightarrow (f(A) \wedge f(B))$.

No student is AA, since ‘no student drinks or smokes’ is truth-conditionally equivalent to ‘no student drinks and no student smokes’. Note that ‘not every’ is not AA, as ‘not everybody drinks and not everybody smokes’ does not entail that not everybody drinks or smokes.

The next layer consists of DE elements (like *not everybody*). Note that every AA context is also DE (given (35)) and every Anti-Morphic context is also AA (given (34)). NPIs, then, differ with respect to which layer of negativity is qualified to license them. English *any* is licensed in DE contexts (and thus in all negative contexts), others only in AA contexts (such as Dutch *ook maar*), and some NPIs can be licensed by the Anti-Morphic sentential NM only. Generally, NPIs that are licensed in DE contexts are referred to as *weak NPIs*; NPIs that are only fine in AA contexts as *strong NPIs*; and NPIs that are fine in Anti-Morphic contexts only are called *superstrong NPIs*. An example of the latter category would be the Dutch idiom *voor de poes*: *zij is *(niet) voor de poes* (she is not for the cat ‘she’s pretty tough’); cf. Van der Wouden 1994; see also Chapter 11.

Although these observations are all empirically correct, it should be noted that even this classification should be subject to further modification. For instance, Hoeksema (1999a) shows that Dutch NPI *hoeven* cannot occur in the first argument of a universal quantifier, even though it can occur in non-AA DE contexts such as *weinig* (‘few’):

- (36) a. *Iedereen die *hoeft* te vertrekken, moet nu opstaan (Dutch)
 everybody who needs to leave must now get up
 ‘Everybody who needs to leave, must get up now’
 b. *Weinig* mensen *hoeven* te vertrekken
 Few people need to leave
 ‘Few people need to leave’

This already suggests that the distinction between superstrong, strong, and weak NPIs is not fine-grained enough.

With regard to (ii), Giannakidou (1998, 1999 et seq.) shows that, while DE-ness is not always a sufficient condition for NPI licensing, it is not always a necessary condition for it, either. For instance, yes/no questions are not DE, even though they license NPIs (see van Rooij 2003, though see Mayr 2013 and Nicolae 2015 for a different perspective), and similar observations have been made for *only* (cf. von Stechow 1999). *Only* is not DE, as the following does not hold:

- (37) Only Mary has a car $\not\Rightarrow$ Only Mary has a BMW

Also, Greek *tipota* (‘anything’) can be licensed under modals meaning ‘may’ or ‘want’, or in subjunctive clauses (Giannakidou 1998, 1999, 2000). This may suggest that DE-ness does not seem to be the weakest layer of negativity; therefore, Giannakidou proposes, following Zwarts (1995), to further extend the hierarchy

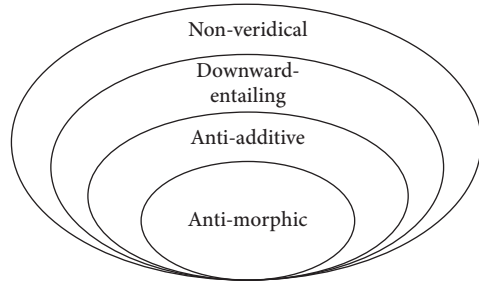


Fig. 1.1 The Negative Hierarchy
(cf. Giannakidou and Zeijlstra
2017)

of negative contexts by another layer of negativity: non-veridicality (defined as in (38)).

- (38) A propositional operator F is non-veridical if Fp does not entail or presuppose that p is true in some individual's epistemic model.¹⁹

To clarify this, *perhaps* (in (39a)) is a non-veridical operator, whereas *unfortunately* in (39b) is veridical since a speaker uttering (39a)a does not take the sentence *John is ill* to be necessarily true, whereas a speaker uttering (39b) does do so.

- (39) a. Perhaps John is ill
b. Unfortunately, John is ill

Non-veridicality can be seen as an additional layer of negativity (even weaker than DE-ness) and may account for those cases where NPIs, such as English *any* terms, may appear in non-DE contexts; see Zwarts (1995) for a proof that all DE contexts are non-veridical, as shown in Figure 1.1.

At the same time, however, NPIs like *any* may not appear in all non-veridical contexts, such as most modal contexts:

- (40) *Perhaps John read *any* books

Note, though, that this does not mean that there cannot be 'superweak' NPIs that are licensed in all non-veridical contexts. Lin (2017) and Lin et al. (2014, 2015a) have argued that this is the case for Chinese *shenme* ('any/a') (see also Chapter 11), which, as (41) shows, are, for instance, fine in non-veridical contexts, but not in veridical ones (42):

- (41) a. Yuehan keneng mai le shenme shu (Chinese)
John maybe buy PRF a/some books
'Maybe John has bought a/some book(s)'

¹⁹ After Giannakidou (1998, 1999, 2011).

- (42) *Yuehan zuotian mai le *shenme* shu
 John yesterday buy PRF a/some book
 Intended: 'John has bought (a) book(s) yesterday'
- b. Yuehan kending mai le *shenme* shu
 John must buy PRF a/some book
 'John must have bought a/some book(s)'
- c. Mali zuotian haoxiang mai-le *shenme* shu
 Mary yesterday probably buy-PRF a/some book
 'Mary has probably bought a book yesterday'
- (Chinese)

Hence, the question arises whether classical weak NPIs like *any* or *ever*, and super-weak NPIs like *shenme* should indeed be considered to be licensed in non-veridical contexts. An alternative would be to rethink DE-ness in such a way that it captures those cases of apparent non-DE contexts that allow NPIs in their scope.

This is what [von Fintel \(1999\)](#) proposed. He suggests to reformulate DE-ness into Strawson-DE-ness in the following way:

- (43) A function f of type $\langle \sigma, t \rangle$ is Strawson Downward Entailing iff all x, y of type σ such that $x \Rightarrow y$, and $f(x)$ is defined, $f(y) \Rightarrow f(x)$

Now, an element like *only* (which is defined if its prejacent is true) is Strawson DE. If it is given that Mary has a BMW, (37) holds again. Similarly, if [Mayr \(2013\)](#) and [Nicolae \(2015\)](#) are right in assuming that polar questions may contain something like a covert *only*, it also follows that polar questions are DE. Hence, it seems that DE-ness (thought of as Strawson DE-ness) remains a relevant and important characterization of the distribution of NPIs, albeit one that may not hold for every NPI.

In connection with (iii), we should note that all approaches to NPI licensing discussed so far are only dependent on the logico-semantic properties of the licensing context. This is, however, not always the case. For instance, conditionals only allow NPIs under particular pragmatic conditions, as discussed by Heim (1984) and von Stechow (1989). Ladusaw (1996), Linebarger (1980, 1987), and Giannakidou (1999) provide additional examples where contexts that are clearly non-DE or non-veridical still license NPIs if they come along with a particular negative implicature, as is shown below:

- (44) Exactly four people in the room *budged an inch* when I asked for help²⁰

The source of licensing in (44) cannot be reduced to the semantic properties of its position at LF, but seems to lie in the fact that, for the speaker, the number of assistants is smaller than expected/hoped for.

²⁰ Example taken from Ladusaw (1996).

The last example suggests that not only semantic but also pragmatic conditions apply to NPI licensing.

1.3.2 The licensee question

Perhaps even more important than the question of what licenses an NPI is the question of what property an NPI has, such that it can occur only in this particular type of context. It is exactly this question which has dominated the study of NPI licensing over the past 20–30 years.

Two types of approach have been formulated to address this question. For some scholars, NPI-hood reduces to some semantic and/or pragmatic requirement that ensures that NPIs can only be felicitously uttered in negative contexts of some sort (DE, AA, or non-veridical). For others, the answer should lie in syntax, i.e., NPIs come along with some syntactic feature that forces them to appear in negative environments only.

The first major contribution in the first direction is the *widening + strengthening* account by Kadmon and Landman (1993). Their account consists of two steps. First, they propose that NPI indefinites, such as English *any* terms, differ semantically from plain indefinites in the sense that these NPIs are domain wideners. Such domain-widening indefinites extend the domain of reference beyond the contextual restrictions that plain indefinites are subject to. Take (45), which contains Kadmon and Landman's original examples:

- (45) a. I don't have potatoes
b. I don't have any potatoes

Whereas (45a) entails that, in a particular domain, the speaker does not have potatoes, (45b) suggests that the speaker does not even have a single old potato in some corner in the kitchen.

The second step in Kadmon and Landman's line of reasoning is that they claim that sentences containing NPIs like *any* must be stronger than sentences containing a plain indefinite. (45b) is stronger than (45a): the set of situations where (45b) is true is a clear subset of the set of situations where (45a) is true—so, (45b) entails (45a). The strengthening requirement is thus met. However, the fact that (45b) is stronger than (45a) is due to the presence of the NM: given that negation is DE, removal of the negation in the examples in (45) would reverse the entailment relation. Therefore, without the presence of the negation, a sentence like (45b) would actually be weaker than the sentence without *any*. Uttering (45b) without the negation would thus violate the pragmatic strengthening condition. This is exactly what, for Kadmon and Landman, rules out sentences containing unlicensed NPIs.

The idea that NPIs come along with widening and strengthening effects, which makes sure that they can be felicitously uttered only in DE contexts, has been adopted and implemented in various ways. Krifka (1995), for instance, argues that the strengthening condition follows as an implicature, as sentences with a weak reading generally bring along an implicature that the stronger reading is ruled out. In this respect, he focuses on elements denoting minimal amounts and explains that especially those elements are prone to become NPIs.

Lahiri (1998) connects the NPI property to NPI *even*, arguing that the underlying structure of NPIs is something like ‘even a(n) N’, basing himself on data from Hindi, where the word for *even* is overtly present in indefinite NPIs:

- (46) a. Koiī bhīī (Hindi²¹)
 one even
 ‘Anybody’
 b. Koiī bhīī nahīīN aayaa
 one even NEG came
 ‘Nobody came’

One problem, already acknowledged by Krifka (1995) and also present in Gianakidou (2011) and Chierchia (2006, 2013), is that, under Kadmon and Landman’s approach, NPIs pose strengthening restrictions on the contexts that they can appear in, without such restrictions being encoded in their lexical representations. Therefore, it remains unclear what enforces that sentences containing NPIs must be stronger than those with a plain indefinite.

In order to ensure that NPIs are always subject to a strengthening, Chierchia (2006, 2013) proposes that NPIs obligatorily introduce domain and scalar alternatives and additionally carry a syntactic feature that requires that they must appear under the direct scope of an abstract exhaustifier that renders any stronger domain and scalar alternatives of the sentence containing the NPI false.

This way, Chierchia argues, assertions containing an NPI always yield a semantic contradiction unless this NPI appears in DE contexts. The reason for that is that for Chierchia in non-DE contexts all stronger (or non-weaker) alternative propositions introduced by the NPI jointly entail the assertion. If as a result of exhaustification all those alternatives are to be negated, the assertion will be contradicted. In DE contexts, these alternatives become weaker and will thus no longer be negated under exhaustification. This way, it follows that NPIs are doomed in any other contexts than DE ones.

Naturally, this gives rise to various questions. For one, pragmatic infelicitousness and semantic contradictions are generally not judged as being ungrammatical. However, the judgements on unlicensed NPIs are much stronger: speakers generally feel them to be ungrammatical. Chierchia, following Gajewski

²¹ Example taken from Lahiri (1998).

(2002), circumvents this problem by distinguishing two types of contradiction: logical contradictions and grammatical contradictions. Only logically contradictory expressions, they argue, are ungrammatical; not just any contradictory expression.²²

By contrast, Giannakidou (2011, 2018) takes NPIs to be lexically deficient for referentiality. For instance, she assumes that NPIs like Greek *kanenas* ('anybody') can be uttered felicitously only when they do not have to refer to some entity in the real world. Therefore, these elements are expected to not appear in veridical contexts. But we also saw before that not every NPI is a superweak NPI.

Also problematic is that analyses like the ones I have outlined apply to indefinite NPIs only. Although most NPIs are indefinites, not all of them are. For instance, NPIs like *either* or *need* are not. Concerning the latter, as Iatridou and Zeijlstra (2010, 2013) and Homer (2015) have shown, deontic modal NPIs are actually always universal and not existential. This suggests that, though not necessarily on the wrong track, the original approach is insufficient: it is not the only way to explain why NPIs are banned from certain contexts. It should be noted, however, that most NPIs denote scalar end points, suggesting that scalarity still underlies NPI-hood.

Although, currently, many scholars assume that the ill-formedness of sentences containing unlicensed NPIs is due to pragmatic and/or semantic factors, others have argued that these are ungrammatical as a result of some syntactic constraint.

The tradition that takes NPIs to come along with a syntactic requirement that they be licensed by a (semi-)negative operator goes back to Klima (1964), and has been presented in more modern frameworks by Progovac (1992, 1993, 1994), who takes NPI licensing to be some special instance of syntactic binding, and by Laka (1990), who relates NPIs to the obligatory presence of an affective phrase (ΣP).

Postal (2004), followed by Szabolcsi (2004) and Collins and Postal (2014), introduces a revival of Klima's theory and claims that NPIs, such as English *any*, underlyingly carry a negation, suggesting a syntactic representation of *any* as (47).

(47) *any*: [_D NEG [SOME]]

In a negative sentence containing *any*, the negation moves out of *any* to a higher position where it is realized as an overt negator; in semi-negative sentences, this negation may incorporate in other elements.

Den Dikken (2006) adopts the essence of Postal's analysis, but modifies it in more minimalist terms by assuming that NPIs carry an uninterpretable negative feature that must be checked against a negative head in the clause. Independently,

²² An expression is logically contradictory if and only if, under all significant rewritings of its non-logical parts, the contradiction remains, as is the case for unlicensed NPIs of the relevant kind. This is not the case for grammatical contradictions, such as *It rains and it doesn't rain*, since one could rephrase the second *rain* with *snow* and the contradiction disappears.

and for different reasons, [Neeleman and Van de Koot \(2002\)](#) and [Herburger and Mauck \(2007\)](#) reach this conclusion as well.

The main problem, however, for such purely syntactic approaches is that it is hard to understand why most types of NPI that are attested always denote some end point of a scale. In principle, if NPI licensing is an instance of syntactic feature checking, all kinds of element should be able to act as NPIs, whereas the distribution of most, if not all, NPIs seems to be restricted semantically.

[Herburger and Mauck \(2007\)](#), however, try to overcome this criticism by arguing that the scalar-end point property is a necessary, but not a sufficient condition for NPI licensing. For them, it is indeed a pragmatic and/or semantic property whether some element may be a candidate for becoming an NPI, but that it is only the presence of some uninterpretable negative feature that turns an element into an NPI.

1.3.3 The licensing question

Finally, all cases discussed so far show that all NPIs must stand in a particular relation to their licensors. [Ladusaw \(1979\)](#) suggests that, since the licensing requirement involves a scopal semantic property, this relation basically boils down to a scope requirement at LF: all NPIs must be within the scope of a DE operator at LF.

But as [Ladusaw \(1979\)](#) has already remarked, this constraint on the licensing relation may be a necessary, but not a sufficient condition. NPIs, generally speaking, may not precede their licensor, even if this licensor outscopes the NPI at LF. Hence, [Ladusaw \(1979\)](#) argues that the c-command relation must hold not only at LF, but also at surface structure. This now explains why (48) (taken from [Ladusaw 1996](#)) is ruled out.²³

(48) *He read any of the stories to none of the children

However, [Linebarger \(1980\)](#) points out that the NPI-licensing relation must be more severely constrained. Concretely, she claims that NPIs must not only be outscoped by a DE operator at LF, but that no scope-taking element may intervene between the NPI and its licensor, either—a claim dubbed the *Immediate Scope Constraint* (ISC). Take the following minimal pair (again taken from [Ladusaw 1996](#)):

²³ However, as has been pointed out by [Ross \(1967\)](#), [Linebarger \(1980\)](#), and [Uribe-Etxebarria \(1996\)](#), NPIs sometimes appear outside the scope of their licensor at surface structure, as shown below. The example is from [Linebarger \(1980\)](#).

- (i) A doctor who knew anything about acupuncture wasn't available

- (49) a. Sam didn't read every child a story $\neg > \exists > \forall$; $\neg > \forall > \exists$
 b. Sam didn't read every child any story $\neg > \exists > \forall$; $*\neg > \forall > \exists$

Although (49a) is ambiguous between a reading where the existential scopes over the universal and a reverse reading, this second reading is out in (49b). This directly follows from the ISC, as the NPI would then not be directly outscoped by a DE operator.²⁴

However, as discussed in Section 3.1, NPIs are sometimes fine in non-DE contexts, as long as these contexts introduce some negative implicature. The relevant example was (44), repeated here as (50).

- (50) Exactly four people in the room *budged an inch* when I asked for help

Obviously, the well-formedness of (50) does not follow under the above-sketched ISC analysis.

For Linebarger, examples such as (50) show that NPI licensing actually takes place indirectly. In short, she states that what is responsible for NPI licensing is that a sentence containing some NPI gives rise to an implicature that contains a negation directly outscoping this NPI. For sentences already containing a negation, this follows straightforwardly; for other DE operators, this implicature needs to be paraphrased in such a way that it contains a negation (e.g. *few N* implies *not many N*). For (50), the required negative implicature should contain a paraphrase such as *Not as many people as I expected*. Note that, as long as a formal computation procedure of such implicatures is lacking, this type of account cannot make exact predictions. In fact, the lack of a formal procedure for implicature computation makes this type of analysis extremely vulnerable to overgeneralization, as almost every sentence brings in negative implicatures (cf. Krifka 1995).

Giannakidou (1999, 2006a) occupies an intermediate position between Ladusaw's and Linebarger's proposals. She takes NPI licensing to be a relation which takes place at LF between an NPI and a non-veridical operator and which is subject to the ISC. But she also allows *NPI rescuing*, where a sentence containing an NPI that lacks a non-veridical licenser at LF may be rescued from ill-formedness if the sentence still gives rise to a negative implicature. This mechanism is close to Linebarger's account, with the difference that, for Linebarger, all NPI licensing functions in this way, whereas, for Giannakidou, it is a secondary mechanism: Giannakidou thus allows NPI licensing to take place at two distinct levels.²⁵

²⁴ Interestingly enough, modals do not count as interveners between NPIs and their licensors (witness the well-formedness of *Nobody may read any book*) (cf. von Stechow and Iatridou 2007).

²⁵ In order to distinguish between licensing in the broad sense (all types of NPI licensing) and LF licensing of NPIs, Giannakidou refers to the former as NPI sanctioning.

1.4 The landscape of negative dependencies

On the basis of the previous discussion, two things ought to be kept in mind. First, it should be noted that the three questions I have outlined are not independent. If it turns out that some NPI has a particular distribution, for instance (Strawson-)Downward Entailment, the licensee question must address why this NPI has exactly that distribution, and why this requirement also imposes constraints on the structural relation between itself and its licensor. Second, these questions do not have to be answered in the same way for every NPI. If, as appears to be the case, various NPIs are subject to different licensing conditions, it may very well be that different kinds of NPIs are NPIs for different reasons, and therefore also require different types of licensing relations. In the following chapter, I will take this conjecture to heart and argue that a more pluriform approach to NPI-hood can better explain the attested landscape of negative dependencies.

The reason why a pluriform approach to NPI-hood seems necessary is not only because it has been attested that NPIs can be sensitive to different logico-semantic, syntactic, or pragmatic requirements. We already saw that there are NPIs that appear to be licensed in (Strawson-)DE contexts (often referred to as weak NPIs), and NPIs that are licensed in AA (strong NPIs) or Anti-Morphic contexts (super-strong NPIs). And, as it turns out, there are also NPIs, like Dutch *hoeven* ('need'), which are dubbed strong/weak NPIs, that are licensed only in a subset of DE contexts as well as NPIs that are licensed only in a superset of DE contexts, namely non-veridical contexts (so-called superweak NPIs).

But these five types of NPI do not jointly constitute the landscape of negative dependencies. There are two more phenomena that also form kinds of negative dependencies. The first phenomenon is known as Negative Concord, and involves elements that sometimes appear to behave like negative quantifiers (NQs) and sometimes more like NPIs. The second phenomenon concerns Positive Polarity Items, elements that are banned from negative contexts. I will discuss each in turn.

1.4.1 Negative Concord

Although the distinction between negative elements (as discussed in Section 1.2) and NPIs (as discussed in Section 1.3), at first sight, appears to be straightforward—negative elements are semantically negative, NPIs are not—it turns out that things are not always that clear. In this section, I present one such case. Take the following examples from Italian:

- (51) a. Gianni *non* ha telefonato (Italian)
 Gianni NEG has called
 'Gianni didn't call'

- b. *Nessuno* ha telefonato
 NEG-body has called
 ‘Nobody called’

In (51a), the semantic negation is introduced by *non*. The sentence without *non* simply means ‘Gianni called’. In (51b), *nessuno* acts like an NQ, such as English *nobody*, and thus induces a semantic negation. However, if the two are combined in a sentence, only one semantic negation is yielded, whereas, from a compositional perspective, two semantic negations would be expected:

- (52) Gianni **(non)* ha telefonato a *nessuno*
 Gianni NEG has called to NEG-body
 ‘Gianni didn’t call anybody’

The phenomenon where two (or more) negative elements that are able to express negation in isolation yield only one semantic negation when combined is called Negative Concord (NC) after Labov (1972), and has been discussed extensively in the past decades.

NC is exhibited in a large variety of languages. Within the Indo-European language family, almost every variety of the Romance and Slavic languages, and a number of Germanic languages (Afrikaans, West Flemish, Yiddish, and some Dutch and German dialects), as well as Albanian and Greek, exhibit NC.

NC comes about in different kinds. In some languages, for example Czech, an NM obligatorily accompanies all neg-words, regardless of their number and position. Those languages are called *Strict NC languages*, following terminology by Giannakidou (1998, 2000). In other languages, so-called *Non-strict NC languages*, such as Italian, NC can only be established between neg-words in postverbal position and one element in preverbal position, either a neg-word or an NM. Examples are below:

- (53) a. Milan **(ne-)*vidi *nikoho* (Czech)
 Milan NEG.saw NEG-body
 ‘Milan didn’t see anybody’
 b. Dnes **(ne-)*volá *nikdo*
 Today NEG.calls NEG-body
 ‘Today nobody calls’
 c. Dnes *nikdo* **(ne-)*volá
 today NEG-body NEG.calls
 ‘Today nobody calls’
- (54) a. Gianni **(non)* ha telefonato a *nessuno* (Italian)
 Gianni NEG has called to NEG-body
 ‘Gianni didn’t call anybody’

- b. Ieri **(non)* ha telefonato *nessuno*
yesterday NEG has called NEG-body
'Yesterday nobody called'
- c. Ieri *nessuno* (**non*) ha telefonato (a *nessuno*)
yesterday NEG-body NEG has called to NEG-body
'Yesterday nobody called (anybody)'

The reader should note that this typology of NC languages is not exhaustive. In languages like Bavarian and West Flemish, NC is allowed to occur, but it is not obligatory (Den Besten 1989; Haegeman 1995). In French and Romanian, the combination of two neg-words gives rise to ambiguity between an NC reading and a reading with two semantic negations, standardly referred to as a Double Negation (DN) reading (cf. De Swart and Sag 2002; Corblin et al. 2004; De Swart 2010; Fălăuș 2009). And in other languages, multiple neg-words may not give rise to NC, but multiple NMs can, e.g. certain varieties of Afrikaans (cf. Biberauer and Zeijlstra 2012a, b).

The central question in the study of NC concerns the apparent violation of semantic compositionality in examples like (52). How is it possible that two elements that induce semantic negation when used by themselves yield only one negation when combined? In the literature, two approaches have been dominant: (i) the NQ approach, where every neg-word is taken to be semantically negative and where the missing negation in (52) results from some semantic absorption mechanism dubbed quantifier resumption; and (ii) the approach that takes neg-words to be semantically non-negative NPI-like indefinites, and the semantic negation in (51b) to be only covertly present—two positions we will discuss at length in Chapter 3.

But this is not the only question that pops up. A second question, given a neg-word's ability to yield a semantic negation in isolation, is why should it depend on another negative element in the first place? Why are the Italian and Czech examples in (55) (without the NMs) ungrammatical?

- (55) a. **Gianni ha telefonato a nessuno* (Italian)
Gianni has called to NEG-body
'Gianni didn't call anybody'
- b. **Dnes nikdo volá* (Czech)
today NEG-body calls
'Today nobody calls'

We know from English that NQs can also give rise to sentential negation:

- (56) a. Mary saw nothing
- b. Nobody left

Hence, expressing sentential negation is not restricted to NMs (and is even allowed in Non-strict NC languages like Italian, cf. (51b)).

The fact that the examples in (55) are ungrammatical shows that NC also involves negative dependencies, irrespective of how the phenomenon is explained. By definition, the neg-words in (51)–(55) are also NPIs if they cannot survive without negation.

Taking NC to be a special kind of NPI-hood appears to favour the approach that takes neg-words to be semantically non-negative. However, that must not necessarily be the case. It is very possible that neg-words are NQs that, for independent reasons, must co-occur in certain configurations with an NM. At the same time, it is not straightforwardly clear what such independent reasons may be. But an approach that takes neg-words to be NPIs faces serious questions as well. If neg-words are semantically non-negative, how can the readings of sentences such as (51b) (repeated here as (57)), where a single neg-word induces semantic negation, be derived?

- (57) *Nessuno* ha telefonato (Italian)
 NEG-body has called
 ‘Nobody called’

In an influential proposal by Ladusaw (1992), neg-words are said to differ from plain NPIs in the sense that they are self-licensing, i.e., if nothing else licenses neg-words, NPIs license themselves. But then the question arises as to why certain NPIs are self-licensing and others not.

Hence, NC forms negative dependencies like (other) NPIs, but it also shows that the landscape of negative dependencies is more heterogeneous than is standardly assumed.

1.4.2 Positive Polarity-sensitivity

A final phenomenon that needs to be addressed concerns Positive Polarity Items (PPIs). While English *any*-terms require some DE licensing context, PPIs, by contrast, are known to be illicit in negative contexts.

At least four different types of PPIs have been discussed in the literature. The first type is represented by the English *some*-series and their counterparts in other languages (Jespersen 1917; Baker 1970; Progovac 1994; Van der Wouden 1994; Giannakidou 1998, 2011; Haspelmath 1997; Szabolcsi 2004; among many others). The second class consists of high-scale elements, such as *rather* (cf. Krifka 1995; Israel 1996, 2011). The third class of PPIs contains speaker-oriented adverbs, and has been thoroughly discussed by Nilsen (2003); Ernst (2009); and Giannakidou and Mari (2018). The final class of PPIs concerns deontic modals which obligatorily outscope negation, such as English *must* (cf. Israel 1996, 2011; Iatridou and Zeijlstra 2010, 2013; and Homer 2015). For an overview of all types of PPIs, the reader is referred to Van der Wouden (1994) and Israel (2011).

Each type is exemplified in (58). Note, though, that, contrary to most NPIs, PPIs in negative sentences do not always render a sentence ill-formed, but rather disambiguate it. Therefore, in (58a) and (58d), the sentences are not ruled out, but rather the readings with the PPI taking scope under the negation are excluded.

- (58) a. John didn't see somebody
 *‘John saw nobody’
 √‘There is somebody John didn't see’
 b. I am (*not) rather ill
 c. They (*don't) possibly like spinach
 d. Mary mustn't leave
 *‘Mary doesn't have to leave’
 √‘It's obligatory that Mary doesn't leave’

What PPIs thus show is that they cannot scope below negation. In that sense, they appear to be the mirror image of NPIs, and various proposals have tried to account for the behaviour of PPIs in terms of anti-licensing (Ladusaw 1979; Progovac 1994; among others). On the other hand, it has recently been claimed by others, most notably by Van der Wouden (1994), Szabolcsi (2004), Ernst (2009), and Giannakidou (2011), that PPIs behave rather differently from NPIs and, therefore, should call for a different theoretical treatment.

Szabolcsi (2004), who pursues Postal's (2004) idea that NPIs underlyingly carry some negation or negative feature, proposes that PPIs like *some* actually have two underlying negative features. Since two negations cancel each other out, *some* can naturally survive in positive sentences/environments. In negative contexts, though, one negative feature is taken care of by the presence of an overt licenser, leaving the PPI behind with an unlicensed negation. Therefore, the PPI in a negative context makes the sentence bad.

A different line of reasoning is explored by Nilsen (2003). Following Krifka (1995), Nilsen argues that the pragmatic and semantic effects that Kadmon and Landman take to be responsible for NPI-hood naturally extend to PPI-hood. This idea is also manifest in Ernst (2009), which, whilst arguing against Nilsen's scale-based analysis of PPI-hood, endorses the idea that the PPI status of speaker-oriented adverbs ultimately reduces to speaker commitment and is therefore pragmatic/semantic in nature.

But again, nothing requires that all PPIs are treated alike. Just as we saw that it must be the case that different types of NPIs may have different sources for their NPI-hood, it is equally likely that different types of PPIs also have different sources for their PPI-hood. It is this line of reasoning that will be pursued throughout this book.

1.5 Conclusions

In this chapter, I have tried to sketch the major developments in the study of the syntax of negation and the study of negative polarity so far, and the ways in which these two phenomena can be taken to be connected.

While the first part of this chapter focuses on the notion of sentential negation and the way in which sentential negation can be expressed cross-linguistically, the second part discusses in more detail the types of negative dependencies that are empirically attested, and points out that the richness of the landscape of NPIs, NC (items), and PPIs indicates that negative dependencies should be taken to be a heterogeneous rather than a homogeneous phenomenon. This means that new research questions have to be formulated, and new hypotheses will have to be entertained.

Those research questions and hypotheses that guide such a pluriform approach to the study of negation and negative dependencies will be presented in detail in the next chapter.