

Minimalism and diachronic syntax: the development of negative expressions*

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Abstract

The present paper provides a formal account of the development of negative expressions as an instance of grammaticalisation, in the sense of Roberts & Roussou (2003). Drawing on data from the history of Greek, it is shown that (a subclass of) emphatic indefinites in the scope of negation are prone to reanalysis as *n*-words. It is next argued that *n*-words follow the typology of pronouns; thus reanalysis of the relevant indefinites is of the DP > ϕ P > NP kind, yielding different types of negative elements accordingly.

Keywords: focus, grammaticalisation, indefinites, negation, pronouns, reanalysis

1. Introduction

1.1 Sentential negation

Sentential negation can be morphologically expressed in at least three different ways: as a clitic (or prefix), an adverb, or the combination of a clitic with an adverb (doubling). These options are illustrated in (1)-(3) respectively:

- | | | |
|------|---|--------------------|
| (1a) | <i>Non</i> ha telefonato.
not has called | (Standard Italian) |
| (1b) | <i>Dhen</i> tilefonise.
not called. _{3S}
'He/She hasn't called.' | (Modern Greek) |
| (2) | Peter hat <i>nicht</i> gegessen.
Peter has not eaten
'Peter hasn't eaten.' | (German) |
| (3) | Jean <i>ne</i> mange <i>pas</i> .
John not eat. _{3S} not
'John doesn't eat.' | (Standard French) |

In syntactic terms, it has been argued that negation projects its own phrase (NegP) (see Pollock 1989; Ouhalla 1991; Zanuttini 1997). The position of NegP in the clause structure is subject to variation (Zanuttini 1997, 2001). In principle, there are at least three domains in the tree where NegP may project: it can be V-related as in German (2), T-related as in

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English, French (3) and Italian (1a), or C-related as in Modern Greek (MG) (1b) (Roberts & Roussou 2003).

Diachronically, the variation regarding the position and realisation of sentential negation makes it possible for changes to take place along any of these two dimensions. More precisely, negation may acquire new morphological exponents, or change position in the structure, or both. Jespersen's cycle (Jespersen 1917) illustrates this point (for more recent accounts see van Kemenade 2000; Roberts & Roussou 2003; Zeijlstra 2004; Kiparsky & Condoravdi 2006):

- | | | | |
|-----|---------------------|-----------------------|-----------------------------|
| (4) | <i>Stage One:</i> | a. Old English: | ic <i>ne</i> sege |
| | | b. Old French: | jeo <i>ne</i> dis |
| | | | I not say |
| | <i>Stage Two:</i> | a. Middle English: | I <i>ne</i> seye <i>not</i> |
| | | b. Standard French: | Je <i>ne</i> dis <i>pas</i> |
| | | | I not say neg |
| | <i>Stage Three:</i> | a. Early New English: | I say <i>not</i> |
| | | b. Colloquial French: | Je dis <i>pas</i> |

According to (4), in Stage One there is a single negative morpheme (preceding V). In Stage Two, another element is introduced 'reinforcing' the original negator. This element is an ordinary noun in French *pas* ('step'), while in English it is a quantifier (*nan whit* 'no creature' > *not*). In Stage Three, the original negator drops out, leaving the former 'reinforcer' as the sole negative marker in the sentence, thus taking us back to Stage One. The new negator may next be reinforced by a new lexical item (Stage two), which may in turn develop into the main negator (Stage Three), and so on. It is in this respect then that the development of sentential negation has a cyclic nature.

1.2 Other negative expressions

Negation is also expressed in the form of *n(egative)*-words, which distribute as quantifiers or polarity items (PIs). Consider the examples in (5)-(7) from English, (Standard) French, and MG respectively:

- (5a) I saw *nothing*.
 (5b) I didn't see *anything* vs *I saw *anything*.
 (5c) I didn't see *nothing*. (Double negation, Standard English)
- (6a) Je *n'ai* vu *personne*.
 I NEG-have seen no-one
 'I have seen no-one.'
 (6b) *Personne ne* m'a vu.
 no-one NEG me-has seen
 'No-one has seen me.'
 (6c) *Personne ne* m'a *pas* vu. (Déprez 1997:114)
 no-one not me-has not seen
 'No-one hasn't seen me.' (Double negation)
- (7a) *(Dhen) idha kanenan/KANENAN.
 not saw._{1S} anyone/no-one
 'I didn't see anyone/ I saw no-one.'
 (7b) KANENAS/*kanenas dhen me idhe.
 no-one / anyone not me saw._{3S}

‘No-one saw me.’

English has one series of negative quantifiers (the *no*-series) and one of PIs (the *any*-series). French *personne* (or *rien*) has mixed properties: for example, it requires matrix negation *ne*, as in (6a-b), but may also trigger double negation when it is preverbal and *pas* is present, as in (6c), just like English *no-one*. MG *kanenas* (or *tipota*) always requires negation if it is to be interpreted as a negative element. It can also appear in other polarity contexts (questions, conditionals, etc.), provided it is not focused. Finally, only focused *kanenas* can precede negation, as the contrast in (7b) shows. Focus then yields universal quantification (*kanenas qua* a negative quantifier), while its absence yields existential quantification (*qua* an indefinite bound by a designated sentential operator) (see Tsimpli & Roussou 1996; Giannakidou 2000). The co-occurrence of sentential negation and *n*-words is referred to as negative concord (NC).

Looking at the morphosyntactic properties of *n*-words in (5)-(7), we observe that English allows for the expression of negation as part of the DP (the *no*-series), while in French and MG, negation is morphologically marked on the sentential particle only, and not on the DP. In other words, there is variation regarding the position where the Neg feature may be realised. This morphosyntactic pattern appears to some extent to correlate with the semantic properties of *n*-words. In particular, it goes along the broad distinction between quantifiers and PIs. Quantifiers are inherently negative, and are morphologically marked as such, while PIs aren't, but instead become negative in association with Negation, and usually do not bear any negative morpheme. As Déprez (2000) argues, the DP internal structure of *n*-words to a large extent determines their external distribution (that is, as quantifiers or PIs).

Let us assume that *n*-words form a dependency under Agree (roughly as in Chomsky's (2001, 2004) system)¹ with Neg. In the case of quantifiers, the association with matrix Neg determines their scope, while the Neg feature may only be lexicalised once, as part of the DP quantifier. In the case of PIs, Agree assigns them the negative feature, which is lexicalised by matrix negation. PIs essentially distribute like indefinites, in the sense of Heim (1982). In both of these dependencies, Neg is the Probe and the *n*-word is the Goal. The Neg feature is at least realised on the Probe or the Goal, or in some cases it can be realised on both. Following Roberts & Roussou (2003:144), we can then formally distinguish three types of *n*-elements:

- (8a) Items which must be Probes and cannot be Goals: *no*, *dhen*, *no*-words.
- (8b) Items which can be Probes or Goals: French *personne*.
- (8c) Items which must be Goals and cannot be Probes: *any*-words, MG *kanenas*.

Syntactic change can affect any of these items along different dimensions. For example, a Probe can develop to a Goal (that is, from quantifier to a PI) and vice versa.

Having outlined some basic properties of sentential negation and *n*-words, I next turn to the development of these elements out of indefinites. In section 2, I start by outlining the analysis presented by Roberts & Roussou (2003), which I then modify in the light of empirical evidence from Greek. In section 3, I consider the implications of this alternative for the syntactic properties of *n*-words and the postulation of a NegP in the clause structure, along the lines of Manzini & Savoia (2002). Section 4 concludes the discussion.

¹ In Chomsky's system, Agree requires the presence of uninterpretable features on the Probe and the Goal. In what follows, I assume that there is no need to postulate such features, as argued by Roberts & Roussou (2003). For an alternative approach, see Roberts (2007).

2. The development of negative expressions

2.1 *N-words in the history of French*

Roberts & Roussou (2003: 146-157) consider the development of *n*-words in French (see Jespersen's cycle in (4)). The development of *pas/point* as strengtheners of sentential negation and of *personne/rien* as *n*-words goes through similar stages in the history of French (although *personne* develops much later). Consider the following examples (data from Foulet 1990):

- (9a) Douce *rien* por cui je chant. (Old French, OF)
 'Sweet one of who I sing.'
 (9b) Je ne connais *personne* si heureuse qu'elle. (Earlier French)
 'I don't know a person as happy as her.'

Agreement on the adjective in each case shows that *personne* and *rien* were feminine nouns. The situation is different in Modern French (MF), since these elements distribute like other quantifiers (cf. *personne/rien/qualqu'un d'aimable* 'no one/nothing/something friendly').

According to Roberts & Roussou, a subclass of indefinites grammaticalised as *n*-words under the structural reanalysis summarised in (10) below:

- (10a) [DP [D $\emptyset$] [NumP [Num *personne*] [NP $t_{personne}$]]] >
 (10b) [DP [D $\emptyset$] [NumP [Num *personne*] [NP]]]

The structural change in (10) involves loss of N-to-Num movement, so that items like *personne* are directly merged in Num. The effects of this reanalysis can be summarised as follows: loss of descriptive content, loss of phi-features, and absence of adjectival modification.

The trigger for this change is linked to independent changes affecting the D system in the history of French, and more precisely the need to have D lexically filled. Consider the examples below:

- (11a) Je ne nourriroie *trahitor*. (Old French)
 'I would not feed a traitor.'
 (11b) S'*anmie* volés avoir...
 'If you want to have an enemy...'
 (12a) Jean a mangé *(*des*) pommes. (Modern French)
 John has eaten (some) apples.
 (12b) Jean n'a pas mange [e *de* pommes].
 John not-has not eaten of apples
 'John hasn't eaten any apples.'

The indefinites in (11) are singular bare nouns and appear in polarity contexts (negation and conditional). According to Foulet (1990: 56), the null indefinite in this context is interpreted as a non-specific indefinite (contrasting with those cases where there is an overt indefinite article triggering the specific indefinite reading). In MF, on the other hand, a null D is not tolerated (12a). The null D, where available, is associated with a negative interpretation (12b) (see Kayne 1975).

Turning to the development of sentential negation, it is observed that nouns like *pas*

‘step’, *point* (‘point’), and *mie* (‘crumb’) were initially used in Old French in order to reinforce the sentential negation *ne*. Let us consider the following example with *point* (Foulet 1990: 267):

- (13) De contredit n’i avra *point*.
 of opposition not-there will-have bit
 ‘There will not be a bit of opposition.’

The element *point* is separated from its *de*-complement (which is fronted to a clause-initial position). According to Roberts & Roussou, *point* lacked the descriptive content to qualify as a restriction on a quantifier (unlike *personne* and *rien*). Semantically, this is due to the fact that it is a ‘minimiser’, in the terminology of Bolinger (1972) and Horn (1989). Syntactically, this is evidenced by the fact that it can be stranded. These properties facilitated its reanalysis as a clausal negator (*mie* dropped out in the 17th century though). The noun *pas*, also a minimiser, differed as it wouldn’t take a *de*-complement in any case, but could further appear with intransitives (as a loose cognate object; on the relation between minimisers and predicates, see Hoeksema (2001)). These elements, which were initially used to strengthen clausal negation, show XP > X reanalysis, and furthermore lose their D property and become the new exponents of Neg (along with *ne* – without *ne* and only with *pas* in Colloquial MF). The final step of reanalysis, evidenced in Modern Colloquial French, involves the direct association of the internally reanalysed element as a Neg element directly.

To summarise: the development of *n*-expressions affected a subclass of nouns, which share the property of having reduced descriptive content. Their structural reanalysis involves a Move to Merge (Move > Merge) change in an upward fashion, first inside the DP and later in the clause, and is conditioned by independent changes affecting the D system in the history of French.

2.2 Evidence from Modern Greek

As already mentioned, the indefinite nouns that were reanalysed as clausal negators in the history of French (with *pas* as the main survivor) belong to the class of minimisers. On the other hand, *personne* and *rien*, which became *n*-words (PIs/Quantifiers), are nouns that denote generic content (Roberts & Roussou 2003: 155), and are characterised by Kiparsky & Condonavdi (2006) as ‘generalisers’. These two sets of nouns then are susceptible to being reanalysed as exponents of negative expressions.

In this section, we turn to MG in an attempt to shed some light on the development of *n*-words out of indefinites, drawing on synchronic (and comparative) evidence. Consider the following examples (see also Veloudis 2005):

- (14a) *(Dhen) akuo/sikono/leo KUVENTA/LEKSI.
 not listen._{1S}/lift._{1S}/say._{1S} speech/word
 ‘I won’t listen/tolerate/say a word.’
 (14b) *(Dhen) vlepo/ghnorizo PSIXI.
 not see._{1S}/know._{1S} soul
 ‘I don’t see/know a soul.’
 (14c) *(Dhen) efagha BUKIA.
 not ate._{1S} bite
 ‘I didn’t eat a bite.’

- (14d) *(Dhen) ipja STAGONA.
not drank._{1S} drop
'I didn't drink a drop.'
- (14e) *(Dhen) kunjete FILO.
not move._{3S} leaf
'Not a leaf is moving.'

In the above examples, there is a singular bare indefinite in object (14a-d) or subject (14e) position, which is licensed by sentential negation (*dhen*) and is necessarily focused; as such, the indefinites in (14) can also be preposed, e.g. 'PSIXI dhen idha', 'FILO dhen kunjete', exactly like the negative PIs in (7). The interpretation we have in (14) is negative. Take for example (14c): 'Dhen efagha BUKIA' means 'I didn't *even* eat a bite', the implication being that the speaker didn't eat anything/ate nothing. In other words, the focused bare indefinite in the scope of negation yields a negative PI reading.

A number of clarifications are required with respect to the data in (14). First, note that these indefinites are generally excluded from other polarity contexts, as the ungrammaticality of (15) shows:

- (15a) *Efajes bukia?
ate._{2S} bite
'Did you eat a bit?'
- (15b) *Kunjete filo?
move._{3S} leaf
'Is there a leaf moving?'

In other words, bare indefinites of this sort do not distribute like non-emphatic *tipota/kanenas*, but only like their emphatic counterparts². Recall from the discussion in section 1 (see (7)) that the negative reading of *kanenas/tipota* requires both negation and focus on the PI. These two conditions hold for the bare indefinites in (14) as well; thus their distribution is in accordance with that of negative PIs.

Second, if the indefinite article (*enas*-masc., *mia*-fem., *ena*-neut.) is present, then negation can be absent:

- (16a) (Dhen) efagha *mia* bukia.
not ate._{1S} a bite
'I ate/didn't eat a bite.'
- (16b) (Dhen) kuniete *ena* filo.
not move._{3S} a leaf
'A leaf is (not) moving.'

The sentences in (16) are grammatical irrespectively of the presence of negation. Crucially, the negator *dhen* does not give rise to a negative interpretation of the indefinite, which in

² Some of these indefinites may appear in some other polarity contexts, in particular in a *prin*-(before) clause, or in certain conditionals (Giannakidou 1997: 83-85):

- (i) Prin pis leksi, sou leo oti...
before say._{2S} word, you tell._{1S} that...
'Before you say a word, I'm telling you that...'
- (ii) An pis leksi, tha thimoso.
If say._{2S} word, will get.angry._{1S}
'If you say a word, I'll get angry.'

However, even this option does not exhaust all the contexts where PIs appear.

this case is not bare but introduced by the indefinite article. In other words, *dhen* in (16) only negates the proposition: in (16a) for example, the reading we get is: ‘it’s not the case that I ate a bite’, with the possible implication (if there is contrastive stress) that I ate quite a few bites of food.

It should also be noted that singular bare indefinites are generally not possible in MG, unless they are mass nouns of some sort, as in (17a), or bare plurals, as in (17b). Moreover, they are restricted to an object or a postverbal subject position, as shown in (17c) below:

- (17a) *Ipja nero, efagha psomi*,..
 drank._{1S} water, ate._{1S} bread
 ‘I drank (some) water, I ate (some) bread, ...’
- (17b) *Aghorasa vivlia*.
 bought._{1S} books
 ‘I bought some books.’
- (17c) (**Fitites*) *irthan (fitites) sto mathima*.
 students came._{3P} (students) to-the class
 ‘Students came to the class.’³

The noun *psomi* in (17a) is not strictly speaking a mass noun, like *nero*; however, it is acceptable in this context since its lexical meaning allows for quantification over subparts (Longobardi 1994: 633). According to Longobardi (op. cit.), bare nouns of the sort in (17) have a null D, which at the level of semantics is interpreted as an existential quantifier. The restriction of a null D to certain syntactic contexts is due to the requirement that null elements appear in ‘governed’ positions. How exactly government translates in current minimalist terms is not relevant in the present discussion (but see Borer (2005: 269-271) for a possible answer regarding preverbal bare subjects). For present purposes, it suffices to know that bare indefinites in MG have a restricted distribution.

Suppose next that instead of the noun *bukia* in (14c), we have the noun *psomi* (cf. (17a)), as in (18):

- (18) *Dhen efagha psomi*.
 not ate._{1S} bread.
 ‘I didn’t eat bread.’

Substitution of one noun for the other removes the negative reading associated with the indefinite. In other words, the sentence in (18) cannot mean ‘I didn’t eat anything’ (cf. (14c)), but can only mean ‘It’s not the case that I ate bread’, with the implication that I ate something else (if there is contrastive stress), exactly as in (16). It is easily observed that this difference derives from the lexical semantics of the two nouns: while *psomi* allows for quantification over subparts, this is not the case for the noun *bukia*, which by itself denotes the smallest amount of food, and is thus a minimiser. Furthermore, while the indefinite in (18) can be modified, e.g. *poli/fresko psomi* (lots of/fresh bread), this is not the case with the indefinites in (14). Modification by an adjective for example (*meghali bukia* = ‘big bite’) is possible, but it automatically removes the negative reading on the indefinite. In short, the class of bare indefinites that behaves like *n*-expressions does not tolerate the indefinite article, or any kind of modification in the relevant context. We thus observe, as has already been pointed out in the literature, that only a subset of (bare) indefinites under

³ A preverbal bare plural subject is available in narrative contexts, or when it is focused (see Roussou & Tsimpli 2006).

the scope of negation can become negative.

The situation described above is quite reminiscent of the changes discussed in relation to the development of *n*-words in the history of French. First, the nouns that are interpreted as negative in MG also have reduced descriptive content: they are either minimisers (*bukia*, *stagona*, *filo*; cf. *pas*, *point*) or generalisers (*psixi*; cf. *rien*, *personne*). Second, when negative, they are bare and disallow any modification. The former property is also consistent with the fact that MG does not generally tolerate null Ds, but only in very restricted contexts.⁴ Modern French is even more restrictive as it necessarily has lexicalised Ds. The availability of similar expressions in Greek can give us a view of what took place in the history of French, and how the relevant expressions became negative. So far, we have identified three crucial factors: negation, a bare indefinite which is a minimiser or a generaliser, and focus. The latter in particular, must have also been available in French, thus contributing to the reanalysis of the indefinites under consideration as *n*-expressions; however, we cannot have direct evidence for this from the written sources of the data.

In the light of the discussion so far, the questions that arise are as follows: a) how do these three factors interact in order to give us the derived negative interpretation, and b) what is the syntactic expression of this negative relation with respect to the indefinite?

2.3 A preliminary account

Let us start with the first question, namely the interaction of negation, bare indefinites and focus. According to Kiparsky & Condoravdi (2006), what drives Jespersen's cycle is a contrast between plain and emphatic negation. Emphatic negation can have three different functions: (a) it can mark contradiction of an (implicit) assertion, (b) it can deny an expectation presupposition, or (c) it can "strengthen a negative assertion by lifting contextual restrictions on an indefinite in the scope of negation or by forcing a 'totality' reading on a definite argument of a gradable predicate", as in cases of aspectual disambiguation. In their terms, in a sentence like 'I haven't eaten the porridge', emphatic negation favours the telic reading 'I haven't eaten *any* of the porridge' vs. the atelic "I haven't eaten *all* the porridge (only part/some of it)".

Jespersen's cycle shows that plain negation derives from emphatic negation (universally available), which is in turn formed along with a focused indefinite of the minimiser or generaliser kind. Minimisers strengthen negation 'quantitatively', i.e. something doesn't hold even for the most insignificant amount, while generalisers strengthen negation 'qualitatively', i.e. negation extends to a general class. Going back to the examples in (14), we observe that emphasis on the singular bare indefinite in association with negation has precisely this effect, i.e., it gives rise to a 'nothing/no-one' reading. In terms of diachronic development, Kiparsky & Condoravdi claim that reanalysis of indefinites as *n*-words is the output of two processes. The first is morphosyntactic strengthening of negation with a focused indefinite. The second is semantic weakening, which consists of loss of compositionality and the 'even' meaning, and reduction of the indefinite to a 'plain polarity item'. The PI may further turn to plain negation, like *pas* in French, or *not* in English. Competition between these two processes is what drives Jespersen's cycle, since, if a negated focused indefinite becomes obligatory as a strengthener, it necessarily weakens negation, which can no

⁴ Proper names in MG are also introduced by the definite article, e.g. **(o) Janis* = 'John' (Roussou & Tsimpli 1994), as expected if Greek has no N-to-D movement (see prenominal adjectival modification); thus in order to avoid having a null D that would trigger an existential reading (incompatible with the denotational properties of proper names), Greek lexicalises D by the definite article.

longer be emphatic. Indeed as (14) shows, strengthening of negation with a focused indefinite is indeed quite a common process. The cycle has both phonological (weakening of the negator) and syntactic effects (changes in the categorial status of indefinites).

Let us now consider the syntactic representation of the indefinites in (14). The basic question is whether these elements have grammaticalised as *n*-expressions or not, i.e. whether they share the same structural properties like *personne/rien* (see (10)). Note that the indefinites in (14) are subject to selectional restrictions (and for that reason they are often treated as idioms in descriptive grammars), while *personne* and *rien* are not, to the extent that the +/-animate distinction is obeyed. More precisely, the indefinite *bukia* ('bite') mainly occurs with verbs of eating; *leksi* ('word') is found with predicates that involve some version of 'speech' (say, hear, write, read). The indefinite *psixi* ('soul') has a more generalised distribution, since it is less predicate-sensitive, and in this respect it appears to be more advanced on the 'grammaticalisation' scale. Given then their context sensitivity, these elements, or at least most of them, cannot as yet be treated on a par with *personne* and *rien*. To put it differently, they do not form a paradigm of *n*-words.

The situation is different in some MG dialects, where indefinites of this kind have turned to PIs, yielding a bi-partite negative construction. Kiparsky & Condoravdi (2006) offer a quite detailed discussion of these cases; we simply illustrate with their following examples:

- (19a) Edhokasi sou *prama*? *Apandoxi*! (Crete)
 gave._{3P} you thing hope
 'Did they give you anything? Nothing! (not a hope!)'
 (19b) Dhen exume *kloni* nero/psomi. (Kea)
 not have._{1P} twig water/bread
 'We don't have a 'twig' (drop) of water/ (crumb) of bread.'
 (19c) Dhen kimate *kloni*. (Corfu)
 not sleep._{3S} twig
 'He doesn't sleep a wink.'

As the authors point out, the noun *prama* ('thing', a generaliser) in Cretan Greek corresponds to the PI *tipota* of Standard MG, while the noun *apandoxi* ('hope') is the equivalent of the emphatic PI 'TIPOTA'. The examples in (19b-c) illustrate the development of the indefinite *kloni* ('twig', a minimiser) from a partitive construction in the dialect of Kea, to a degree adverb (like *mie/point* in French) in the dialect of Corfu.

On the basis of the above empirical evidence, we turn to our second question regarding the structural properties of the indefinites in (14). In principle there are two structures available:

- (20a) [_{DP} Ø [.._{NP} *bukia/psixi*/...]]
 (20b) [_{NP} *bukia/psixi*/...]

The structure in (20a) has a null D present, while that in (20b) assigns to the indefinite a bare NP status. If we adopt (20a), then the negative reading is derived via a null D, as argued by Roberts & Roussou (2003). If we adopt the structure in (20b), then the negative reading is directly derived by negation in association with the Noun (NP). Note that there is a further difference between the two structures. The first implies that the NP can still function as an argument, due to the presence of D (see Longobardi 1994), while the second

implies that, in the absence of D, the NP remains a predicate. On the other hand, in section 2.1, we assumed that reanalysis of indefinites as *n*-words involved loss of N-movement to Num (an intermediate functional projection), and thereby loss of any nominal content. Thus there is also a third structure available that we need to consider, namely the one which is smaller than a DP, but bigger than an NP, i.e. a NumP. As will be argued in section 3, the structural reanalysis in (10) can be appropriately modified, so that it covers the two options in (20) as well. I will discuss this issue, after I briefly present the development of *n*-words in the history of Greek in order to complete the picture, following to a large extent the presentation in Roberts & Roussou (2003: 157-159).

To summarise the discussion so far, in the last two sections, I briefly presented the development of *n*-words in the history of French, showing that they involve structural reanalysis which is not independent of other structural changes in the D-system of French. I next considered some empirical data from MG, showing that there is a crucial factor that plays a role in the reanalysis under discussion, which is the presence of an emphatic indefinite of a certain kind in the scope of negation.

2.4 *N*-words in the history of Greek

In the present section, I consider the development of *n*-words in Greek, with the aim of showing the role of emphasis (through different morphemes) on a negated indefinite (see also Kiparsky & Condoravdi 2006). Classical Greek (CG) distinguished between two sentential negators, *ou* and *me*:, whose distribution was largely determined on the basis of modality. These two negators also participated in the formation of two series of negative quantifiers, which followed the distribution of the main negators ((21a-b) from Horrocks 1997: 274-275):

- (21a) *ouk ara gigno:sketai to:n eido:n oudhen.* (Plato, *Parmenides*, 134b)
 not then is-known._{3S} the-forms._{GEN} nothing
 ‘Of the forms then nothing is known.’
- (21b) *oudhen auto:n atimaseis.* (Plato, *Parmenides*, 130e)
 nothing them._{GEN} will-undervalue._{2S}
 ‘You will undervalue nothing of them.’
- (21c) *oudheis ouk oide.*
 no-one not know._{3S}
 ‘No-one doesn’t know.’ (Double negation)

The quantifiers *oudheis* and *oudhen* consist of the negative morpheme *ou*, the emphatic particle *de* and the numeral *heis* (masc.), *hen* (neut.) (or *mia* (fem.) in *oudemia*)⁵. As (21c) shows, the co-occurrence of the quantifier with negation triggered double negation, unless the quantifier followed negation (*ouk oide oudheis*), in which case the sentential negator emphasised the quantifier.

MG *dhen* developed out of the negative quantifier *oudhen*, after a number of morphosyntactic and phonological changes (e.g. reduction of the first unstressed syllable). The quantifier *oudhen* as the equivalent of a clausal negator is already attested in the *Koine*, and is quite systematic in the 6th century AD (Landsman 1988/89; Horrocks 1997):

- (22a) *hoti oudhen ekho:men marturo:n* (P. Oxy.1683)
 that nothing have._{1P} witness

⁵ Their Homeric predecessors were formed by the negative morpheme, followed by the indefinite pronoun *tis*.

- ‘..that we have no witness’ (Koine, Horrocks 1997: 125)
 (22b) *umas oudhen opheleisei.*
 you.ACC not benefit.3S
 ‘It won’t benefit you.’ (Koine, Jannaris [1897] 1987: 426)

As the above examples show, *oudhen* (or *me:dhen*) starts as an argument in object position, a position typically associated with accusative case. It is also indicative from the example in (22a) that *oudhen* participates in a partitive construction as well. The difference is that in (22a) the object is an indefinite (3rd plural) and is realised as a genitive in this case (instead of the usual accusative), while in (22b) it is a 2nd person (plural) pronoun⁶. Furthermore, as Landsman (1988/89:20) points out, its presence with intransitives, which otherwise lack an accusative object, is already found in Aristophanes (*Neb.* 537f), e.g. ‘*he:tis pro:ta men oudhen e:lthe*’ (lit. ‘which first of all nothing arrived’ = ‘first of all she hasn’t arrived’) where *oudhen* gives rise to a clausal negation reading.

According to the approach of Roberts & Roussou (2003: 159), the reanalysis steps are summarised as follows:

- (23) [D *ou* [Num *de* [N *hen*]]] > [D [Num *dhen* [N]]] > [D *dhen* [Num [N]]]

Recall that *oudhen* had a complex structure. The emphatic particle *de* was responsible for the ‘even’ reading, or more precisely ‘not even one’ (see focus on the bare indefinite in (14)). The presence of *de* along with the fact that *ou* in CG was preverbal (Landsman 1988/89) allowed *oudhen* to be preposed. Loss of movement inside the DP, and reanalysis of *oudhen* > *dhen*, created a new exponent for Neg. It is worth pointing out that in the reanalysis in (23), the original negator *ou* drops, leaving the emphatic particle with the numeral (the former reinforcer) as the new exponent of negation (see Stage Three of Jespersen’s cycle in (4)).

The second interesting facet of the changes under consideration has to do with the development of PIs, in connection with the loss of negative quantifiers in the history of Greek; first instances of these elements are found around the 6th century AD:

- (24a) *kai mian oran ouk endidei moi.* (Moschos 3033B, 6th c.; Landsman 1988/89:27)
 and one hour not give.3S me
 ‘He/She doesn’t even give/allow me an hour.’
 (24b) *tipote ou loghizete.* [Digenes Akrites (E), 15th c.]
 anything not think.3S
 ‘He doesn’t think of anything/ He thinks of nothing.’

The new items have a very systematic pattern in their morphological make-up: they are formed by some emphatic element along with an indefinite⁷:

- (25a) *kanenas* < kan (kai + an) ‘even’) + enas.MASC
kam(m)ia < kai/kan + mia.FEM
kanena < kann + ena.neut (‘anyone’)
 (25b) *tipota* < ti + $\forall$ pote (ever) (‘anything’)
 (25c) *po $\forall$ te* (stress shift makes it emphatic) (‘ever’)

⁶ The example in (22b) is reminiscent of the ‘genitive-of-negation’ construction in Russian discussed by Pesetsky (1982). See also the *de*-construction in French, discussed in section 2.1.

⁷ On the role of the focus morpheme in the formation of polarity items in general, see Watanabe (2004).

- (25d) Dhen fovame *kan*.
 not be.scared._{1S} at-all
 ‘I’m not scared at all.’

The item *kanenas* is made up by the emphatic particle *kan*, which survives as a polarity item in MG (see (25d)) and the indefinite *enas*. *Tipota* consists of the indefinite *ti* and the polarity item *pote*, while *po vte* is marked as emphatic by stress shift to the last syllable. In MG, on the other hand, where the morphological structure of these elements has become opaque, in the sense that the former emphatic elements are no longer recognised as such, the distinction between PIs with negative (universal) quantificational force and those with existential force is marked by focus on the former (see ‘TIPOTA’ vs ‘tipota’ in (7)). Although the interplay of emphasis with negation is quite systematic throughout the development of these elements (see Kiparsky & Condoravdi (2006) for more data), its morphosyntactic expression varies. More precisely, emphasis can be a distinct morpheme altogether, which may then end up as part of the indefinite, or it can be directly phonologically marked on the indefinite.

To summarise: the role of emphasis and its interaction with negation has been evidenced in the development of *n*-words in the history of Greek. CG had a series of negative quantifiers, which gave rise to the expression of sentential negation in the form of the neuter quantifier *oudhen* > *dhen*. The loss of negative quantifiers, corroborated by other changes in the grammar, which are left aside at present, gave rise to the development of negative indefinites. These indefinites had an emphatic part as well, and formed the paradigm of polarity items. In MG, the same series distinguishes between a negative and a non-negative reading primarily through focus (along with negation). In the following section, I reconsider the structure in (10), arguing that *n*-words structurally resemble pronouns, and consider the implications for the expression of negation in the clause structure, along the lines of Manzini & Savoia (2002).

3. Structural reanalysis and empirical consequences

Regarding the development of *n*-words in the history of French and Greek, we identified two basic types of such elements. Those that have inherent quantificational force and are marked as negative by the relevant morpheme, and those that acquire any such interpretation through their association (Agree) with Negation. Considering negated indefinites in MG, we suggested two possible structures, repeated below for convenience:

- (20a) [_{DP} Ø [.._{NP} bukia/psixi/...]]
 (20b) [_{NP} bukia/psixi/...]

The question that was raised was whether negated indefinites of this sort conform to the structure in (20a), or the one in (20b), or some other structure along the lines of (10).

In their discussion of negation, Manzini & Savoia (2002) argue that negative adverbs are ‘neither Neg nor Adv’. In other words, they do not lexicalise a Neg projection, or an Adverbial position as such. Instead, they seem to fall into two groups: they are either NPs, and more particularly bare NP adverbs, or QPs. The category Q in their analysis roughly corresponds to our Num position in (10). Their analysis is based on the interaction of *n*-words with (object) clitics in these dialects (see also Zanuttini 1997, 2001). Manzini & Savoia further argue that negative morphemes have nominal properties and essentially lexicalise positions that are typically realised by pronominal

clitics. On these grounds, there is no need to postulate dedicated Neg projections in the clause structure.

In the light of the above remarks, it is easily observed that this approach to negation is directly supported by the diachronic data. In order to elaborate on this point, let us go back to the configurations in (20) and the Greek dialectal data in (19). The element *kloni* in (19c) (from Corfu) for example has acquired an adverbial use in this dialect and essentially ‘strengthens’, i.e., doubles, matrix negation *dhen*. Since it is a bare noun, it can be considered a bare NP adverb, receiving the structural representation in (20b). If this is correct, then it has the properties of a predicate. Indeed this is confirmed by the fact that in this function it has the role of modifying another predicate, namely the verb. Consider next, the Cretan polarity item *prama*. There are two options: it is either a bare NP or it has a functional layer as well (along the lines of (10) perhaps). Given its distribution, namely that it can appear in argumental positions, and given that arguments require some sort of functional structure along the lines of Longobardi (1994), the question is whether it is assigned the structure in (20a). Note that there is a difference between the indefinite *prama* in (19a) which has ‘grammaticalised’ as a PI, and the indefinites discussed in (14), which cannot be considered grammaticalised (at least not ‘fully’), since they are subject to selectional requirements by the predicate. So the actual question that arises is whether the PI *prama* and the indefinites in (14) have the same internal structure.

In order to provide an answer to this question, let us consider another set of empirical data that has to do with the typology of pronouns. Cardinaletti & Starke (1999) distinguish between three types of pronouns, roughly clitics, weak pronouns, and strong pronouns, on the basis of the functional structure available in each case. On the other hand, Déchaine & Wiltschko (2002) argue that pronouns (and determiners) can be NPs, ϕ Ps, or DPs, as illustrated in (26) below (where ϕ P stands for an intermediate functional projection that carries phi-features; cf. the Q position of Manzini & Savoia (2002), or the Num position in (10)):

(26a) [_{DP} D [_{ϕ P} ϕ [_{NP} N]]]

(26b) [_{ϕ P} ϕ [_{NP} N]]

(26c) [_{NP} N]

According to their analysis, DP-pronouns distribute like arguments, ϕ P-pronouns distribute either like arguments or predicates and have the binding properties of variables, while NP-pronouns distribute like predicates. For example, 1st and 2nd person pronouns (‘we’, ‘you’) in English are DPs, while 3rd person pronouns are ϕ Ps (and therefore can participate in bound anaphora like “Every candidate_i thinks he_i is smart”). Similarly, French *l*-clitics (*le*, *la*) are ϕ Ps, and so is the French definite article. The ambiguity of a sentence like the one below stems precisely from this property (Déchaine & Wiltschko 2002:429-430):

(27a) Jean aime le vin.

John love._{3S} the wine

‘John loves (the) wine.’

(27b) [_D $\emptyset$ [_{ϕ} le [_N vin]]] (‘the wine’ = definite)

(27c) [_{ϕ} le [_N vin]] (‘wine’ = generic)

In both cases the article realises the ϕ head; however, the presence vs. absence of a D head determines whether '*le vin*' is interpreted as definite or generic⁸.

With this much background, let us now reconsider the negative indefinites presented in section 2, and in particular the data in (14) and (19). Recall that the examples in (14) involve an emphatic singular bare indefinite, of the minimiser or generaliser kind, which becomes negative in the scope of negation, e.g. LEKSI ('word'), BUKIA ('bite'), PSIXI ('soul'). As already pointed out, at least the first two items are not free in their distribution, in the sense that they only appear with a certain class of predicates. Due to this property, it was suggested that they do not seem to have grammaticalised as PIs. We can then assume that they have the structure in (20a), namely there is a null D (with the addition of an intermediate functional projection)⁹. On the other hand, the noun *prama* ('thing') found as a PI in Cretan Greek, can be assigned a reduced nominal structure, i.e. one that lacks the DP layer, but nevertheless has the ϕ P intermediate projection, i.e. it is of category Q(P) in the analysis of Manzini & Savoia (2002). This structure allows it to have a variable status and distribute like a predicate or an argument. Finally, *kloni* ('twig'), which in the Greek dialect of Corfu has acquired an adverbial use, has a fully reduced structure, consisting of the NP part only.

The three structures that emerge from the above discussion are given in (28) below:

- (28a) [_{DP} D [_{ϕ P} ϕ [_{NP} *leksi/bukia/staghona/filo*]]] (cf. (14a, c, d, e))
 (28b) [_{ϕ P} ϕ [_{NP} *prama/psixi(?)*]] (cf. (19a), (14b?))
 (28c) [_{NP} *kloni*] (cf. (19c))

The structures in (28) can be transferred to the French *n*-words. In particular, we can argue that *n*-words start as bare indefinites with a full functional structures as in (28a), and then reanalyse as in (28b), while some of them further reanalyse as in (28c). The PIs *personne/rien* would then have the structure in (28b) on the basis of their distribution as arguments (in object or subject position); the clausal negator *pas* would have the structure in (28c). A clarification is required at this point: the structures in (28) are meant to capture the syntactic categories to which negative elements may belong, and as such they do not make any claims regarding the status of these elements as strong pronouns or clitics (or even weak pronouns in the Cardinaletti & Starke (1999) terminology). In fact, as already mentioned, negation in some Italian dialects appears to interact with clitics in distributional terms. Negation can in principle then be realized as a clitic of the D, Q, or N type. This observation may in fact be relevant for the treatment of the MG negator *dhen* as a clitic, which probably belongs to the Q/Num category¹⁰. To be more precise, the MG negator *dhen*, which starts as a full DP, possibly reanalyses as in (28b) with the additional property of acquiring a clitic status (and therefore lacks an NP complement as part of its syntactic structure).

Notice that if we adopt this approach, then we are in agreement with the claim put forward by Manzini & Savoia (2002) regarding the syntactic characterisation of negative elements in terms of nominal features, hence eliminating the postulation of a

⁸ Notice that if we accept this analysis, then we have to revise some of the arguments put forward in section 2.1 with respect to the unavailability of a null D in French. Under this alternative, French becomes more like Greek. The presence of *de* in the relevant contexts will have to be treated as the equivalent of the partitive article, which is nevertheless missing in Greek.

⁹ We abstract away from the option of having N movement to ϕ , along the lines of the schema in (10). It is possible that movement takes place, but this is not strictly speaking relevant to the point made here.

¹⁰ MG negator *min* appears to have different properties that bring it closer to the D/Reference syntactic category, as it interacts with the referential properties of the clause; for example, it can have imperative force.

NegP in the sentence. This alternative has interesting implications for grammaticalisation. Recall that with respect to the development of *pas* in French, we had to assume that the original Noun changes category and becomes Neg; something similar has to extend to *kloni* and the other negative expressions, including *dhen* in MG. On the other hand, if grammaticalisation of indefinites as *n*-words follows the path in (28), then there is no change in terms of categorial status, but only in terms of (parts of) functional structure being available or not. Categorial reanalysis then is rather a misnomer, and can be viewed in terms of loss of functional structure, or changes in the position along the sentential skeleton.

The immediate question that arises is the following: is this approach consistent with the basic idea put forward by Roberts & Roussou (2003), namely that grammaticalisation is reanalysis of (a subset of) lexical items in an upward fashion? The answer is positive, as the present account maintains the basic idea of the formal expression of grammaticalisation. First, in all cases we have discussed so far, reanalysis affects the upper part of the functional layer (so it is upwards). Second, reduction of functional structure also entails loss of movement (or more precisely, loss of movement paths), and thus maintains the link between loss of movement and grammaticalisation. Finally, the options presented in (28) are instances of structural simplification (in the form of eliminating functional structure). Overall then, the present analysis is consistent with the basic claims regarding grammaticalisation put forward by Roberts & Roussou (2003), with the additional advantage that it offers a new perspective to the notion of ‘reanalysis’.

A few more implications of the present approach need to be mentioned, before we end this section. First, under the current account, grammaticalisation of indefinites as *n*-expressions is put together with properties of the pronominal system, and more precisely of reanalyses that can affect pronouns. Second, it is possible to find a different source of *n*-expressions, and in particular of sentential negation. In particular, along with nominals, we find verbal elements that become reanalysed as negation. Although we do not have the relevant diachronic data, it is worth pointing out that in some languages, sentential negation does indeed have a verbal form. Payne (1985) gives examples from languages that have negative verbs, as illustrated below:

- (29a) Na $\forall$ e $\forall$ alu $\forall$ a Siale. (Tongan, Payne 1985: 208)
 ASP go ABS Charlie
 ‘Charlie went.’
- (29b) Na $\forall$ e *vikai* [ke $\forall$ alu $\forall$ a Siale].
 ASP NEG ASP go ABS Charlie
 ‘Charlie didn’t go.’
- (29c) NuNan $\cong$ -Nki| -n baka-ra. (Evenki, Payne 1985: 213)
 he NEG-past._{3S} find.PART
 ‘He didn’t find.’

In Tongan (a Polynesian language) negation is expressed in the form of *vikai*, which as Payne argues has verbal properties: it can be modified by the aspectual morpheme *na $\forall$ e* (like the main verb in (29a)) and takes a clausal complement introduced by the morpheme *ke* (which is found in embedded clauses). In Evenki (a northern or Siberian language of the Tungus family), negation is expressed as a negated auxiliary (cf. also *don’t* in English), which takes the participial form of the main verb as its complement. Leaving aside the exact properties of these constructions, what interests us here is the fact that negation does not seem to correspond to a distinct syntactic category but has a nominal or verbal basis.

The verbal-type of negation in (29) allows us to treat the ‘grammaticalisation’ of negation in these systems along similar changes attested with the development of modals (T elements) or even complementisers (C elements) out of lexical verbs (see Roberts & Roussou 2003: Chapters 2 and 3 respectively)¹¹.

To summarise, in the present section I have argued for a modification of the approach put forward by Roberts & Roussou (2003) with respect to the development of *n*-expressions, by suggesting that these elements structurally resemble pronouns. Their grammaticalisation consists of reduction of the upper functional structure, yielding two types of *n*-words: those that are the syntactic equivalent of ϕ Ps (or QPs), and those that are simply NPs. The former distribute like arguments or predicates, and the latter as predicates.

4. Conclusions

In the present paper I discussed the development of *n*-words (sentential negation, PIs, negative quantifiers) out of indefinites. On the assumption that this is an instance of grammaticalisation, I considered the French diachronic data in the light of some synchronic comparative evidence coming from MG. It was shown, along with Kiparsky & Condoravdi (2006), that an emphatic indefinite (minimiser/generaliser) can acquire negative content when it occurs in the scope of negation. This was further supported with data from the development of negative expressions in the history of Greek. It was then argued that non-grammaticalised negative indefinites have a full DP structure (albeit with a null D), while grammaticalised negative ones have either an ϕ P or a bare NP structure. Finally, the present analysis is consistent with the basic claims regarding grammaticalisation put forward by Roberts & Roussou (2003), as it maintains the notion of structural simplification. At the same time it differs as it gives a new perspective of ‘categorical reanalysis’: in terms of the present analysis, *n*-expressions start as nominal and remain nominal.

References

- Bolinger, D. (1972). *Degree words*. The Hague: Mouton.
- Borer, H. (2005). *The normal course of events* [Structuring sense, vol. II]. Oxford: Oxford University Press.
- Borsley, R. D. & B. Morris Jones (2005). *Welsh negation and grammatical theory*. Cardiff: University of Wales Press.
- Cardinaletti, A. & M. Starke (1999). “The typology of structural deficiency: a case study of the three classes of pronouns”. In H. van Riemsdijk (ed.), *Clitics in the languages of Europe*. Berlin: Mouton de Gruyter, 145-234.
- Chomsky, N. (2001). “Derivation by phase”. In M. Kenstowicz (ed.), *Ken Hale: A life in language*. Cambridge, MA: MIT Press, 1-52.
- Chomsky, N. (2004). “Beyond explanatory adequacy”. In A. Belletti (ed.), *Structures and beyond: The cartography of syntactic structures, vol. 3*. Oxford: Oxford University Press, 104-131.
- Davis, H. (2005). “On the syntax and semantics of negation in Salish”. *International Journal of American Linguistics* 71: 1-55.
- Déchaïne, R.M. & M. Wiltschko (2002). “Decomposing pronouns”. *Linguistic Inquiry* 33: 409-442.
- Déprez, V. (1997). “Two types of negative concord”. *Probus* 10: 1-85.
- Déprez, V. (2000). “Parallel (a)symmetries and the internal structure of negative expressions”. *Natural Language and Linguistic Theory* 28: 253-342.
- Foulet, L. (1990). *Petit syntaxe de l’ancien français*. Paris: Champion.

¹¹ The realisation of negation as a verb is also found in Welsh (Borsley & Morris Jones 2005), and Salish (Davis 2005).

- Giannakidou, A. (1997). *The landscape of polarity items*. Groningen Dissertations in Linguistics 18.
- Giannakidou, A. (2000). "Negative...concord?". *Natural Language and Linguistic Theory* 18: 457-523.
- Heim, I. (1982). *The semantics of definite and indefinite noun phrases*. Doctoral dissertation, University of Massachusetts, Amherst.
- Hoeksema, J. (2001). "Rapid change among expletive polarity items". In L. J. Brinton (ed.), *Historical linguistics 1999. Selected papers from the 14th International Conference on Historical Linguistics*. Amsterdam: John Benjamins, 175-186.
- Horn, L. (1989). *A natural history of negation*. University of Chicago Press.
- Horrocks, G. (1997). *Greek: A history of the language and its people*. London: Longman.
- Jannaris, A. (1897). *An historical Greek grammar chiefly of the attic dialect*. Hildesheim: Georg Olms. [Reprint 1987].
- Jespersen, O. (1917). *Negation in English and other languages*. Copenhagen: A. F. Høst.
- Kayne, R. (1975). *French syntax*. Cambridge, MA: MIT Press.
- Kemenade, A. van (2000). "Jespersen's cycle revisited: formal properties of grammaticalization". In S. Pintzuk, G. Tsoulas & A. Warner (eds), *Diachronic syntax: Models and mechanisms*. Oxford: Oxford University Press, 51-74.
- Kiparsky, P. & C. Condoravdi (2006). "Tracking Jespersen's cycle". In M. Janse, B. D. Joseph & A. Ralli (eds), *Proceedings of the 2nd International Conference of Modern Greek Dialects and Linguistic Theory*. University of Patras, 172-197.
- Landsman, D. (1988/89). "The history of some Greek negatives: Phonology, grammar and meaning". *Glossologia* 7-8: 13-31.
- Longobardi, G. (1994). "Reference and proper names". *Linguistic Inquiry* 25: 609-655.
- Manzini, M. R. & L. Savoia (2002). "Negative adverbs are neither Adv nor Neg". In M. Hirotani (ed.), *Proceedings of the North East Linguistics Society* 32. University of Massachusetts, Amherst: GLSA, 327-346.
- Ouhalla, J. (1991). *Functional categories and parametric variation*. London: Routledge.
- Payne, J. (1985). "Negation". In T. Shopen (ed.), *Clause structure [Language typology and syntactic description, vol. I]*. Cambridge: Cambridge University Press, 197-242.
- Pesetsky, D. (1982). *Paths and categories*. Doctoral dissertation, MIT.
- Pollock, J.-Y. (1989). "Verb movement, Universal Grammar, and the structure of IP". *Linguistic Inquiry* 20: 365-424.
- Roberts, I. (2007). *Diachronic syntax*. Oxford: Oxford University Press.
- Roberts, I. & A. Roussou (2003). *Syntactic change: A minimalist approach to grammaticalization*. Cambridge: Cambridge University Press.
- Roussou, A. & I. M. Tsimpli (1994). "On the interaction of Case and definiteness in Modern Greek". In I. Philippaki-Warbuton, K. Nicolaidis & M. Sifianou (eds), *Themes in Greek linguistics*. Amsterdam: John Benjamins, 69-76.
- Roussou, A. & I. M. Tsimpli (2006). "On Greek VSO again!". *Journal of Linguistics* 42: 317-354.
- Tsimpli, I. M. & A. Roussou (1996). "Negation and polarity items in Modern Greek". *The Linguistic Review* 13: 49-81.
- Veloudis, I. (2005). *I Arnisi [The Negation]*. Athens: Patakis.
- Watanabe, A. (2004). "The genesis of negative concord: Syntax and morphology of negative doubling". *Linguistic Inquiry* 35: 559-612.
- Zanuttini, R. (1997). *Negation and clausal structure*. Oxford: Oxford University Press.
- Zanuttini, R. (2001). "Sentential negation". In M. Baltin & C. Collins (eds), *The handbook of contemporary syntactic theory*. Oxford: Blackwell, 511-535.
- Zeijlstra, H. (2004). *Sentential negation and negative concord*. Utrecht: LOT Publications.