Topics in the Syntax- Semantics of Greek particles

PhD Dissertation

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Abstract

In the first five chapters of the thesis I argue that there is no semantic distinction between strict and non-strict Negative Concord Languages (NCLs). I claim that what distinguishes the two groups of NCLs is a formal feature that is introduced either by negative markers or negative words. I provide new evidence from Greek which challenges the idea that Greek is a run-of-the-mill strict Negative Concord language posing a challenge for a theory of Negative Concord. The proposed syntactic analysis shares the basic idea of Zeijlstra (2004) that Negative Concord is multiple syntactic agreement between an element with interpretable features and multiple elements with uninterpretable features. However, it deviates from it in crucial assumptions, as it is argued that there is no semantic distinction between the semantic properties of n-words and NMs, hence between strict and non-strict Negative Concord languages in general. In addition, it is shown that if the view that feature checking is distinguished from feature valuation (Pesetsky & Torrego, 2007) is adopted, then NC phenomenon can be accounted for on the basis that languages are distinguished with respect to a formal feature.

The last two chapters of the thesis focus on the semantics of ambiguous particles already introduced in the discussion of NC. The discussion then extends to epistemic and concessive particles, as well as to absolute superlatives. Apparently unrelated particles (i.e. epistemic, concessive and superlatives) are linked due to a homophonous particle with distinct semantic interpretation, different syntactic distribution and prosodic pattern. The core question behind this classification is whether there is a link behind unrelated interpretations of the same particle. Although a definitive answer is not provided in all cases, an insight in their use, syntactic and semantic properties is attempted.

What is concluded from the above-mentioned topics is that any theory needs to be flexible enough, so as to be able to account for the properties of elements with hybrid properties at a syntactic and semantic level.

Contents

List of abbreviations

DN: Double Negation

iNEG: Interpretable Negative (feature)

NC: Negative Concord

NCL(s): Negative Concord Language(s)

NM: Negative Marker

NPI: Negative Polatity Item

OP: Operator

PRT: Particle

SUF: Suffix

uNEG: Uninterpretable Negative (feature)

uVAL: Unvalued (feature)

val: Valued (feature)

Chapter 1

The phenomenon of Negative Concord

Negation and the phenomenon of Negative Concord (NC henceforth) have attracted a lot of attention in previous literature (Laka, 1990; Zanuttini, 1991; Giannakidou, 1998; Rowlett, 1998; Herburger, 2001; Zeijlstra, 2004 among others). A detailed presentation of the previous analyses is beyond the purposes of this dissertation. The goal of this chapter is to provide a broad picture on NC and then to present what Greek brings into the picture. The chapter is organised as follows. At first, the phenomenon of negation is introduced, Double Negation languages (1.1.1) and Negative Concord Languages (1.1.2). Next, I proceed to a presentation of NC in Ancient (1.2) and Modern Greek (1.3), as well as a discussion of the properties of Ancient and Modern Greek n-words.

1.1 Negation cross linguistically[1]

1.1.1 Double Negation Languages

In many languages additional negative elements introduce a separate instance of logical negation. The negative marker (NM) *not* in (1) and the negative element *nobody* in (2) contribute semantic negation in the two sentences, respectively.

(1) John did **not** come

(2) *Nobody* came

The co-occurrence of sentential negation with a single negative word, or the co-occurrence of two negative words, results in double negation, cancelling negative polarity. This is the case in languages such as English, Dutch, German or Norwegian inter alia (i.a.) where each negative element introduces a separate

[1] The discussion is limited to languages that express negation through a negative particle, leaving aside languages which use a negative verb or a special verb (see Zanuttini, 1997 for more on this).

logical negation. The presence of two negative elements in the English example in (3) results in a positive meaning; (3) is, hence, semantically equivalent to (4). The languages in which each negative element introduces semantic negation are called Double Negation languages (DNLs):

(3) I did**n't** call *nobody*

(4) I called somebody

1.1.2 The phenomenon of Negative Concord

In contrast to DNLs, there are languages in which two or more negative elements co-occurring in a clause result in a single negative meaning, a phenomenon known as Negative Concord (Labov, 1972). Negative Concord is defined as a constellation in which multiple negative constituents in the same clause contribute one instance of semantic negation to the interpretation of the clause in which they occur[2]. In (5), two negative elements, the NM *non* and the negative expression *nessuno* contribute one logical negation, not two, as would be expected; languages such as Italian in which two or more negative elements result in a single semantic negation are referred to as Negative Concord languages (NCLs):

(5) **Non** ha telefonato a *nessuno* ¬ ,¬ = ¬
NM[3] has called to n-body
'I didn't call anybody'/'#I didn't call nobody'

Negative elements that appear in NC constructions are often called negative words or *n-words* (Laka, 1990). Depending on the distribution of n-words in

2 NC is a clause bound phenomenon; when two negative elements appear in different clauses, then two semantic negations appear also in NCLs:

Greek

(i) Dhen iksera oti dhen efage
NM knew that NM ate
'I didn't know that (s)he didn't eat'/'I knew that (s)he ate'

3 NM stands for Negative Marker

NCLs, languages fall into two groups[4]. In short, in 'strict' NCLs a sentential negative marker[5] (NM) is obligatory in order for an n-word to be licensed both in preverbal (6) and post verbal (7) position. Such languages include Czech, Polish, Romanian, Greek i.a.

Czech (Zeijlstra, 2004)

(6) Dnes *nikdo* *(**ne**)[6]volá
today n-body NM.call
'Today nobody is calling'

(7) Dnes *(**ne**)[7]volá *nikdo*
today NM.call n-body
'Today nobody is calling'

By contrast, in 'non-strict' NCLs sentential negation is absent when n-words appear preverbally, but required when these appear post-verbally. Italian, and Spanish are two examples of non-strict NCLs. In languages falling into this group, preverbal *nessuno* is incompatible with the NM as shown in (8), while post verbal *nessuno* requires the presence of the NM (9):

4 The discussion is limited to NC proper languages (den Besten, 1986). I am leaving aside for the present discussion NC non-proper languages such as West Flemish and Bavarian which appear to optionally need sentential negation and I am concentrating on negative proper languages which obligatorily need the presence of negation when n-words appear post verbally

(ii) (example from Zeijlstra (2004)
…da Valère niemand (nie) ken *West Flemish*
…that Valère n-body NM knows
'…that Valère doesn't know anybody'

5 I follow Penka (2011) in taking sentential negation to be defined as semantic negation scoping above the existential quantifier that binds the event argument.

6 I follow the notation in which an asterisk outside the parenthesis (i.e.*(x)) indicates that the presence of the element x inside the parenthesis is required, otherwise the sentence is ungrammatical. When the asterisk stands inside the parenthesis (i.e. (*x)) then it is the opposite that holds; presence of the element x in the structure results in ungrammaticality.

7 The NM in Czech appears as a clitic attached to the verb.

Italian

(8) *Nessuno* (***non***) ha telefonato
n-body NM has called
'Nobody called'

(9) Anna *(**non**) ha telefonato a *nessuno*
Anna NM has called to n-body
'Anna didn't call anybody'

That this is not a matter of a subject-object asymmetry, but contingent upon the syntactic position of the n-word in relation to the verb, becomes apparent in (10); here, the post verbal subject requires the presence of the NM (cf. (8)):

(10) *(**Non**) ha telefonato *nessuno*
NM has called n-body
'Nobody has called'

A second difference between n-words of non-strict NCLs and strict NCLs is that n-words in the former group can license other n-words in the same clause without the need of an NM. The Italian n-word *nessuno* in (11a) sanctions the n-word *niente* without the presence of the NM *non*. On the other hand, in Greek the n-words *kanenas* and *tipota* cannot co-occur on their own in the absence of a Greek NM (11b).

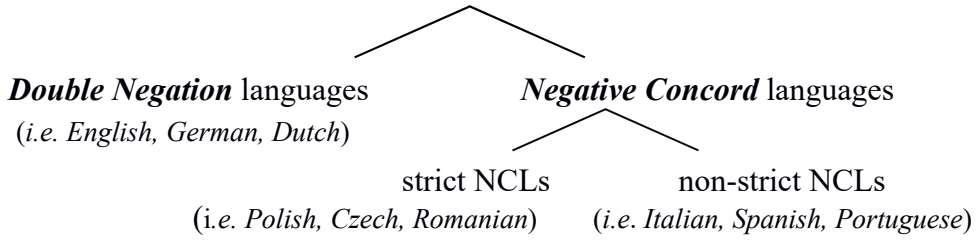
(11) a.*Nessuno* (*non) ha mangiato *niente*
n-body NM has eat n-thing
'Nobody ate anything'

b. *Kanenas* *(dhen) efage *tipota*
n-body NM ate n-thing
'Nobody ate anything'

Notice that n-words in (11a) result once again in a single logical negation. This phenomenon is known as *negative spread* (den Besten, 1986). In negative spread, the negative feature is 'spread' among any number of indefinite expressions without the presence of an NM. N-words of non-strict NCLs typically license negative spread, while the phenomenon is not attested in strict NCLs since an NM always has to be present for an n-word to appear in the structure.

In sum, languages with sentential NMs and n-words can be categorised as in the diagram in (12):

(12) **Negation & negative elements**[8]



1.1.3 Double negation in NCLs

The typology above does not entail that DN readings are never encountered in NCLs (de Swart, 2010). What is crucial is that the non-expected readings come with a marked intonational pattern and are licensed in selected environments. More precisely, non-strict NCLs license structures where a preverbal n-word co-occurs with an NM and the resulting interpretation is one of DN; namely, a preverbal n-word can co-occur with sentential negation (contra its non-strict behaviour), in which case the interpretation of the sentence is that of double negation (this contradicts the Negative Concord property according to which, multiple negative elements result in one logical negation).

For instance, it has been reported that DN readings appear in Italian in structures such as (13) (Penka, 2011). Speaker's B answer, which includes both an NM and a preverbal n-word, can be a felicitous answer to a negative question, namely a question which includes negation like the one of Speaker A. In this

[8] The diagram in (12) represents negation in languages with sentential NMs.

particular case, the answer gives rise to a DN reading and not to infelicity (cf. (11a)).

(13) Speaker A: Who didn't eat?[9]
Speaker B: *NESSUNO*[10] **non** ha mangiato
n-body NM has eaten
'Nobody has not eaten'/'Somebody has eaten'

Moreover, a DN reading comes up also in cases like (14). Once again, the utterance of the first speaker includes one semantic negation, while the utterance of the second speaker comes as a denial of the statement of the former speaker.

(14) Speaker A: *Nessuno* ha mangiato
Speaker B: NESSUNO **NON** ha mangiato
n-body NM has eaten
'It is false to say that nobody ate'

As the gloss reveals, example (14) gives rise to the so-called '*verum*' focus interpretation. Example (14) cannot be uttered out of the blue to mean 'somebody ate', but requires that the truth of the proposition has been questioned. Relevant examples are also discussed in de Swart (2010) who acknowledges that these readings show particular intonation patterns and are contextually restricted.

On the other hand, strict NCLs never license a DN interpretation even in denial environments, as it is shown in the counterpart examples from Greek, a strict NCL, in (15) and (16) respectively:

9 Penka (2011) attributes the data to Guerzoni.
10 Capitals indicate that the particular element is prosodically prominent.

(15) Speaker A: Pjos **dhen** efage?
who NM ate
'Who didn't eat?'
Speaker B: *KANIS* **dhen** efage
n-body NM ate
'Nobody ate'/'#Nobody has not eaten!'

(16) Speaker A: *Kanis* **dhen** efage
n-body NM ate
'Nobody ate'
Speaker B: *KANIS* **DHEN** efage
n-body NM ate
'Nobody ate'/'#Nobody didn't eat!'

1.2 Negative Concord in Ancient Greek

In this section I am presenting NC in Ancient Greek (1.2.1) and the properties of Ancient Greek n-words (1.2.2); this historical overview will prove important for our understanding of the properties of a particular class of n-words in Modern Greek.

1.2.1 Ancient Greek, a non-strict NCL

Ancient Greek[11] used two sentential negative markers, *ou(k)*[12] and *mi(n)*[13] as it is shown in (17) and (18) respectively. The distribution of these two NMs is highly complex (see for an overview Chatzopoulou, 2012; Willmott, 2013), but for simplicity I will maintain that there is a broad distinction according to which, *ou(k)* was the NM for declarative main clauses (Payne, 1985), while *mi(n)* was

11 The period referred to as Ancient Greek according to Horrocks (2014) starts from c.8th century B.C till c.7th century A.D.
12 When the following word started from a vowel then *–k* was preserved. *Ouk* was replaced by tis allomorph *ouh* depending on aspiration (see Willmott, 2013) or *ou* when the following lexical element started from a consonant.
13 The final consonant *-n* is preserved if the word following the sentential NM *min* begins either with a vowel, or with specific consonants or diphthongs such as *k*, *p*, *t*, *g*, *b*, *d*, *ks*, *ps*, *ts* and *tz*. In all other cases, *-n* is deleted and *min* appears as *mi.*

used in non-indicative environments ones. Ancient Greek was a non-strict NCL since n-words preceding the verb excluded the NM (c.f. *nessuno* in Italian):

(modified example from Horrocks, 2014)

(17) *Oudhis* (***ouk**) idhe ton Sokrati
n-body NM saw the Socrates
'Nobody saw Socrates'

(18) *Midhis* imas (***min**) pitheto[14]
n-body us NM persuade
'Let nobody persuade us'

Similarly to all NCLs, strict and non-strict ones, when n-words of Ancient Greek appeared post verbally, then the NM was obligatory[15] (for a more elaborate discussion see Chatzopoulou, 2012; Horrocks, 2014).

(modified example from Horrocks, 2014)

(19) O Sokratis *(**ouk**) idhen *oudhena*
the Socrates NM saw n-body
'Socrates didn't see anybody'

(20) Ke moi *(**mi)** thorivisi *midhis*[16]
and clitic NM shout.down n-body
'And nobody should shout down to me'

14 Plato, *Laws,* 4.711c*,* line 5
15 Horrocks (2014) points out that in older instances of Ancient Greek, post verbal *ou*-elements were licit without an NM. Cases of post verbal *oudhis* without an NM have been analysed by Horrocks as instances of topicalisation (Horrocks, 2014:16 footnote 31-33), so I leave them aside in the discussion.
16 Demosthenes, *de Pace*, 15, line 3.

1.2.2 Properties of n-words in Ancient Greek

Most n-words in Ancient Greek were compound words which consisted of the NM *ou-*, such as *ou-dhis*[17]*, ou-dhemia, ou-dhen* ('nobody' for masculine, feminine and neuter gender respectively), *ou-dhepote* ('never')*, ou-dhepopote* ('never till now')*, ou-dholos* ('not at all')*, ou-te* ('neither/nor'), *ou-dhe*[18] ('even)', among many others. Apart from *ou*-elements, there were also compound n-words consisting of the NM *mi-* such as *mi-dhis, mi-dhemia, mi-dhen* (masculine, feminine and neuter gender for 'nobody' respectively), *mi-dhepote* ('never till now'), *mi-dhamos/mi-dholos* ('not at all'), *mi-dhamou* ('nowhere') among others.

Negative spread

Similarly to other non-strict NCLs, n-words in Ancient Greek licensed negative spread (den Besten, 1986). In example (21), preverbal *oudhis* co-occurs with the n-word *out*(*e*) which appears twice:

(modified example from Horrocks, 2014)

(21) *Oudhis* popote *out*' ipar *out*' onar aishron idhen[19]
n-body ever n-either awake n-or asleep disgraceful saw
'Nobody ever, either asleep or awake saw of'

Double Negative Reading

Preverbal n-words rarely co-occurred with an NM in Ancient Greek, but when they did, a DN reading arose (22), similarly to non-strict NC Italian (see (13) and (14)):

17 Interestingly the n-word *oudhis* has also a plural form in masculine *oudhenes* which meant 'absolutely nobody'.

18 Note that the partcle *-dhe* of *ou-dhe* should not be confused with the NM of Modern Greek *dhe*(*n*). The particle *dhe* was an an enclitic post-position particle or could appear as a particle with the adversative meaning expressing opposition (see also the TLJ link: http://stephanus.tlg.uci.edu/Iris/demo/lexica.jsp#qid=31379&ql=DE%2F&q=%CE%B4%CE%AD&usr_input=greek).

19 Plato*, Philebus, 65e5*

(modified example from Horrocks, 2014)

(22) Epita ton oronton *oudhis* **ouk** epashe ti[20, 21]
then the watched n-body NM suffered something
'Then nobody of those watching failed to suffer'

In sum, Ancient Greek behaved like a typical non-strict NCL. Preverbal n-words were licensed without an NM and could also license other negative elements (phenomenon of *negative spread*), similarly to other non-strict NCLs, such as Italian.

1.3 Negative Concord in Modern Greek

1.3.1 Modern Greek, a strict NCL

The properties of Negative Concord underwent changes from Ancient to Modern Greek. An exact documentation of how and when this change took place is beyond the scope of this dissertation (for a historical overview see Chatzopoulou, 2012; Willmott, 2013). Modern Greek, henceforth simply Greek, is considered to be a typical strict NCL (Veloudis, 1982; Tsimpli & Roussou, 1996; Giannakidou, 1994, 1995, 1997, 1998, 1999, 2000, 2001, 2002, 2006). To express negation, Greek uses the negative particles *ohi*, *mi(n)*, *dhe*(*n*) (Veloudis, 1982) as shown in (23). At present, I am focusing on the sentential NMs, *dhe*(*n*) and *min*(*n*):

[20] Horrocks (2014:15 in footnote 30) points out that the usual form for double negation is with the intervention of *hostis*/'that/who' between *oudhis* and the NM, namely *oudís hóstis ou*(*k*) [nobody who not], '(there is) no one who (does) not...'. The same construction is replicated with other negative elements.

[21] Xenophon, *Symposium* 1.9.4

(23)	(a)	*ohi*:	(i) constituent negator
			(ii) metalinguistic negator
	(b)	*mi*[22]:	constituent negator
	(c)	*dhe*(*n*)[23, 24] :	sentential negator
	(d)	*mi*(*n*):	sentential negator for subjunctives and gerunds

That Greek is a strict NCL can be seen from the fact that the presence of the NM *dhen* or *mi*(*n*) is obligatory in pre-verbal position as seen in (24) – (25) respectively, and of course with post verbal n-words (26) (cf. the examples in Ancient Greek (17)-(20)).

(24) *Kanenas* ***(dhen)** idhe ton Sokrati
n-body NM saw the Socrates
'Nobody saw Socrates'

(25) *Kanenas* (na) ***(mi)** dhi ton Socrati
n-body PRT[25] NM see the Socrates
'Nobody should see Socrates'

(26) O Sokratis ***(dhen)** ide *kanenan*
the Socrates NM saw n-body
'Socrates didn't see anybody'

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22 Note that the constituent negator *mi* is never followed by the final consonant *–n*, as opposed to the sentential NM *mi*(*n*) (see also footnote 13).

23 It has been a controversial issue when the change from the Ancient Greek NM *ou* to the NM of Modern Greek *dhen* took place (cf. Kiparsky & Condoravdi, 2006; Willmott, 2013; Horrocks, 2014 a.o.). One common approach is that *ou*, was first replaced by *oudhen* (= neuter form of *nobody*), and then *dhe*(*n*) derived from *oudhen* with aphaeresis (Jannaris 1897). In any case, both the sentential negative markers *ou* and *dhe*(*n*) are used in indicative clauses, in Ancient and Modern Greek, respectively.

24 The presence of final *-n* on the NM *dhen* depends on the initial phoneme of the word following. Final *-n* appears in the same environments that final *-n* appears on the NM *min(*n) (see footnote 13).

25 PRT= particle

Since Greek is a strict NC language, it is expected to block *negative spread*. In fact, preverbal n-words cannot license any other n-word without the presence of the NM:

(27) *Kanenas* ***(dhen**) efage *tipota*
n-body NM ate n-thing
'Nobody ate anything'

1.3.2 Properties of n-words in Modern Greek

Greek n-words have been analysed as elements that can bear emphatic stress[26] and in this case, they are called *emphatics* (Veloudis, 1982; Giannakidou, 1997, 1998 i.a.). *Emphatics* receive negative meanings, while their non-emphatic counterparts behave similarly to English NPI elements (ibid.). The list of Greek n-words includes the elements given in (28). Note that the conventional notation of uppercase for emphatics and of lowercase for non-emphatics is adopted only in (28) (Veloudis, 1982):

(28) kanenas$_{\text{-masc}}$[27]/ KANENAS$_{\text{-masc}}$[28] 'anybody/nobody'
kamia$_{\text{-fem}}$/ KAMIA$_{\text{-fem}}$ 'anybody/nobody'
kanena$_{\text{-neuter}}$/KANENA$_{\text{-neuter}}$ 'anybody/nobody'
tipota/TIPOTA 'anything/nothing'
pote/POTE 'ever/never'
puthena/PUTHENA 'anywhere/nowhere'
katholou/KATHOLOU 'at all/not at all'

---

26 Emphatics have been related to focus (Tsimpli & Roussou, 1996), but there have been arguments against this approach (Giannakidou, 1998); I remain agnostic at the moment which analysis is the correct one.

27 There are also the forms *kanas, kana* for the masculine and neuter gender respectively, which are stressed on the last syllable and may only be used as NPIs and not as n-words. To my knowledge, these elements have not received any attention in the relevant literature of Greek NPIs.

(i) Dhen efere kana nero
NM brought n-one water
'(S)he didn't bring any water'
(ii) *Dhen efere KANA nero
'#She brought no water'

28 Apart from kanenas/KANENAS, there is also an alternative type for 'anyone/nobody', namely kanis$_{\text{masc}}$/KANIS$_{\text{masc}}$ which stems from Ancient Greek. Both are widely used in Modern Greek.

It has been argued that emphatics differ from non-emphatics regarding their semantics and their syntactic distribution (Giannakidou, 1993, 1998). In fact, emphatics show a much more limited syntactic distribution compared to non-emphatics, being attested only under negation (29) and under the scope of anti-additive[29] operators such as '*without'* (30) and '*before'* (31). Notice that there are two elements to express the meaning of 'without' in (30), the element *dihos*, which sounds more archaic but is still in use, and the element *choris*.

(29) **Dhen** ton idhe *KANENAS*
NM clitic saw n-body
'Nobody has seen him'

(30) Bike choris/dihos na ton dhi *KANENAS*
entered without/without PRT clitic see n-body
'He entered without anybody seeing him'

(31) Bike prin ton dhi KANENAS
entered before clitic see n-body
'He entered before anybody seeing him'

A detailed presentation of the differences between emphatics and non-emphatics is beyond the scope of this study (see Giannakidou (1993) and (1998) for a detailed comparison). For our purposes, it suffices to point out that emphatics are licit in a proper subset of the environments in which non-emphatics occur as shown in Table 1:

[29] An operator f is anti-additive iff $f(X \cup Y) = f(X) \cap f(Y)$, where $\cup$ and $\cap$ are Boolean disjunction and conjunction respectively.

Table 1: distribution of emphatics and non-emphatics from Giannakidou (1998:p.61)

Environments	***Emphatics***	***Non-emphatics***
Negation	OK	OK
Before clauses	OK	OK
Without clauses	OK	OK
Yes-no/Constituent questions	*	OK
Conditionals	*	OK
Restriction on : Too clauses *S*- comparatives	* *	OK OK
Superlatives	*	OK
Future	*	OK
Subjunctive/modals	*	OK
Imperatives	*	OK
Habituals	*	OK
Disjunctions	*	OK
As if/perhaps clauses	*	OK
Downward entailing DPs	*	OK
Negative verbs	*	OK

1.4 Interim summary

To recapitulate, Greek has evolved from a non-strict NCL (Ancient Greek) to a strict NC one (Modern Greek/Greek). N-words in Modern Greek that appear under negation bear empathic stress and always have to co-occur with an NM or in the c-command domain of a '*without' or 'before'* preposition. Modern Greek is considered to behave similarly to other strict NC languages such as Romanian, Polish, and Czech. As I will show in the following chapter, the above picture of Greek NC is incomplete, a fact which has mislead researchers in their conclusions regarding the properties of Greek n-words, and, therefore, the properties of Greek negation and the theory of Negative Concord more generally.

Chapter 2

Challenging strict Negative Concord

In this chapter, I provide new evidence from Greek which challenges the idea that Greek is a run-of-the-mill strict Negative Concord language. I argue that there is a class of n-words which behaves differently from 'regular' n-words with strict NC properties; this class is widely used in Modern Greek and shows non-strict NC properties. First, I present this class and its relation to 'regular' n-words, negative elements with strict NC properties (2.1). Then, I focus on the particle *oute* which is ambiguous between an additive and a scalar interpretation and it is also subject to speaker variation. I present the properties of the additive particle *oute/*'neither-nor' (2.2), and then the properties of the scalar particle *oute/*'*even'* (2.3). I show how the distribution of this particle poses a challenge for any theory of NC. The discussion is extended to another language with hybrid properties on NC, namely Hungarian (2.4). Finally, I present how the Greek data can be described as an instance of the Jespersen cycle (1917) (2.5).

2.1 The class of *ou*-elements

2.1.1 Properties of ou-elements

Above we saw that previous analyses on Greek negation have focused on elements which require the presence of the negative marker both preverbally (24-25) and post verbally (26). These facts have driven linguists to classify Greek as a 'regular' strict NCL, similarly to Czech or Polish (i.e. Giannakidou, 1998).

I argue that this is not the complete picture of Greek n-words, though; there are two classes of n-words which are still in use and behave differently from 'regular' n-words of strict NCLs. The first and larger group of elements, to be referred to as *ou*-class, mnemonic for the initial diphthong *ou*- that these elements begin with, is a remnant of Ancient Greek and still shows non-strict NC properties. Certain elements of this class are widely used, as we will see, while others are restricted to more formal stylistic registers. To begin with, as

one can see in (32), the preverbal n-word *oudhis* excludes the NM in preverbal position, a property which is preserved from Ancient Greek (cf. (17)).

(32) *Oudhis* eks afton (***den**) irthe[30]
n-body of them NM came
'None of them came'

As expected, *oudhis* requires the presence of the NM when it appears post verbally:

(33) *(**Dhen**) irthe *oudhis* eks afton
NM came n-body of them
'None of them came'

The same pattern is replicated when *oudhis* appears as a determiner of a DP. In example (34), due to the presence of *oudhemia*[31], the feminine counterpart of *oudhis*, the NM is excluded:

(34) *Oudhemia* efthini (***dhen**) eho ego
n-one responsibility NM have I
'I have no responsibility'

With other *ou*-elements which are still in use, such as *oudhepote* ('never till now') or *oudholos* ('not at all') the same pattern is found (35-38); when the n-word appears preverbally (i.e. (35) and (36)) it excludes the NM, while in post verbal position (i.e. (37) and (38)) it requires it. Note that the construction in which an *ou*-element appears preverbally is most frequently encountered in

30 The n-word *oudhis* followed by *ek*(*s*) is a lexicalized type of expression which has survived from ancient Greek to Medieval Greek and, then, as a lexicalized item in Modern Greek. Data in support of the constant use of *oudhis ek*(*s*) can be retrieved in the corpus of Thesaurus Linguae Greacae: http://stephanus.tlg.uci.edu/Iris/demo/tsearch.jsp#s=7

31 *Oudhis* is the masculine form for *nobody/ no one* in nominative case, *oudhemia* is the feminine counterpart and *oudhen* is the neuter form respectively. The plural form of masculine, *oudhenes*, is not in use Modern Greek (cf. footnote 17).

Modern Greek compared to the post verbal one. The reason for this might be that *ou*-elements are in competition with 'regular' n-words and the latter seem to be preferred in post verbal constructions:

(35) *Oudhepote* (***dhe**) zitise ti gnomi mu
n-ever NM asked the opinion mine
'Never did (s)he ask my opinion'

(36) *Oudholos* (***dhen**) me endhiaferi
not.at.all NM clitic interests
'I am not interested at all'

(37) *(**Dhe**) zitise ti gnomi mu *oudhepote*
NM asked the opinion mine n-where
'(S)he never asked my opinion'

(38) *(**Dhe**) me endhiaferi *oudholos*
NM clitic interests not.at.all
'I am not interested at all'

The same properties are shared by the second group, all members of which include the NM *mi*, the standard NM used in subjunctives and gerunds. All elements of this class exclude the NM when they appear preverbally, as in (39) and (40), while they require the NM when they occupy a postverbal position as in (41) and (42), similarly to the distribution of *ou*-elements above (35-38):

(39) *Mite* o Petros irthe, *mite* i Maria tilefonise
mite the Petros came, mite the Maria called
'Neither did Petros come, nor did Maria call'

(40) *Midhepote* vithizete[32]
n-ever sinks
'It never sinks'

(41) *(**Dhen**) irthe *mite* o Petros, ke *(**dhen**) tilefonise *mite* i Maria
NM came mite the Petros, and NM called mite the Maria
'Neither did Petros come, nor did Maria call'

(42) *(**Dhe**) vithizete *midhepote*
NM sinks n-ever
'It never sinks'

Although the class of *mi*-elements is more restricted in number, the n-word *mite*, in particular, is more widely used compared to other elements of this class.[33] However, since the *ou*-class is larger in number and more widely used compared to *mi-class*,[34] in the next sections I will limit the discussion to a comparison between *ou*-elements and 'regular' n-words. The reader, though, should bear in mind that the same restrictions and properties of *ou*-elements apply to *mi*-elements.

32 Data retrieved on 4/12/2016 from the following webpage: http://www.efsyn.gr/arthro/i-ellas klydonizetai-alla-midepote-vythizetai

33 From a statistical search to a corpus of 50824 texts, the word *mite* was used 224 times (a freuqency of 0,0048‰), while the word *midhepote* was only used 17 times (a frequency of 0,0004‰). Data elicited on 11/02/2017 from the webpage: http://hnc.ilsp.gr/statistics.asp

34 In the same corpus of 50824 texts, the word *oute* was used 32389 times (a frequency of 0,6889‰), and the n-word *oudhepote* 1210 times (a frequency of 0,0257‰) (cf. these data with the one in fn. 33). Data elicited on 11/02/2017 from the webpage: http://hnc.ilsp.gr/statistics.asp

2.1.2 Negative spread with ou-elements[35]

Greek has been analysed as a language that prohibits negative spread (see also example (27) above); regular n-words cannot co-occur with other n-words without the support of an NM, as seen in (43) and (44):

(43) *Pote* ***(dhen)** efage *tipote*
n-ever NM ate n-thing
'(S)he never ate anything'

(44) *Kamia* schesi *(**dhen**) ihe *pote* mazi tis
n-one affair NM had n-ever with her
'(S)he was never involved with her'

Nonetheless, the respective examples of (43-44) with their *ou*-counterparts permit negative spread constructions in Modern Greek (45-46), similarly to n-words of non-strict elements (cf. *nessuno* in Italian (11a)). These minimal pairs constitute evidence for the different properties of *ou*-elements in Greek:

(45) *Oudhepote* (***dhen**) efage *tipota*
n-ever NM ate n-thing
'Never did (s)he eat anything'

(46) *Oudhemia* schesi (***dhen**) ihe *pote* mazi tis
n-one affair NM had n-ever with her
'(S)he was never involved with her'

2.1.3 The list of ou-elements and 'regular' n-words

So far, I have shown that there are specific elements which contrary to expectations for a strict NC language, behave like non-strict NC elements. They exclude the NM when they appear preverbally and they license negative spread.

[35] I leave aside in this section the availability of a DN reading with *ou*-elements. I will argue that DN readings do arise in certain cases with elements with non-strict NC properties in Greek.

In the next Table (Table 2), I summarise the two classes of n-words which co-exist in Greek. As one can see, in most cases 'regular' n-words co-exist with *ou*-elements. However, there are elements like *tipota* and *puthena* ('nothing' and 'nowhere' respectively) which have no *ou*-counterparts. Interestingly, and importantly for my purposes, though, there are elements like *oute-mite/'*neither, nor' and *oute/'*even' which exclusively appear with non-strict properties and lack a 'regular' n-word counterpart. This lexical group will become important in the discussion to follow.

Table 2: table on 'regular' n-words and *ou/mi*-elements (elements with non–strict NC properties in Greek)

	'regular' (emphatic) n-words/ strict NC properties	***Ou/mi*-elements / non-strict NC properties**
n-body/ n-one	*kanis* (masculine) *kamia* (feminine) *kanena* (neuter)	*oudhis* (masculine) *oudhemia* (feminine) *oudhen* (neuter)
n-ever	*pote*	*oudhepote*
not.at.all	*katholou*	*oudholos*
n-where	*pouthena*	----
n-thing	*tipota*	*oudhen*
neither/ nor	---- ----	*oute, oudhe* *mite*[36], *midhe*
even	----	*Oute*

Summing up, *ou*-elements, which derive from Ancient Greek, a non-strict NCL, retain their non-strict properties. Preverbally they exclude the NM, postverbally they require it. Researchers so far have focused only on 'regular' n-words with strict NC properties, essentially neglecting the *ou*-class or putting it aside; Giannakidou (1998), for example, reports in a footnote that these elements are

[36] As mentioned in 2.1.1, there are also also *mi*-elements with non-strict NC properties such as *mite*, *midhe/'*neither/nor', *midhepote'*never till now'.

archaic in use. In the next section I will show that even speakers who consider *ou*–elements obsolete or restricted in use have no other choice but to use *ou*-elements in certain cases, where there are no 'regular' counterparts with strict NC properties.

More specifically, I will focus on *oute* which lacks a strict NC version and is ambiguous between two different interpretations ('neither/nor' and 'even') with distinct syntactic distribution. In addition, there is speaker variation with respect to its NC properties, which poses an additional challenge for the analysis. Although, I will leave the rest of *ou*-elements aside, the discussion to follow generalizes to all elements of the *ou*- and *mi*-class.

2.2 *Oute$_1$* ('neither/nor')[37]

Oute can receive two different meanings and appear in two distinct configurations where it is interpreted as 'neither/nor' (47) or 'even' (48). In the latter case, *oute* is usually followed by the particle *kan* (for more on *kan* see Giannakidou (2007)). For reasons of presentation, I will name *oute* as *oute$_1$* when interpreted as 'neither/nor' (47) and as *oute$_2$* when it expresses the meaning of 'even' (48).

(47) **Dhen** tilefonise *oute$_1$* i Anna
NM called oute the Anna
'Neither did Anna call'

(48) **Dhen** tilefonise *oute$_2$* (kan) i Anna
NM called oute kan the Anna
'Even Anna did not call'

[37] *Oute* consists of two particles, *ou*-, the NM of indicatives in ancient Greek, and -*te*, an additive particle of ancient Greek. In my analysis I assume that *oute* is a single particle; however, a different analysis could be that -*te* attaches to *ou*- during the derivation. This approach will not change anything in the analysis I propose.

In the next sections, I present some basic syntactic properties of *oute₁* (2.2.1) and *oute₂* (2.3). Before turning to investigate whether current analyses on NC can account for these facts in chapter 3, I show how the distribution of *oute* differs depending on its semantics and the type of element it modifies. I also show that, leaving speaker variation aside, prosody contributes to regulating the distribution of the NM.

2.2.1 Syntactic properties of oute₁

Oute₁ (interpreted as 'neither/nor') differs syntactically and prosodically from *oute₂* (which is interpreted as 'even'). I first present its syntactic properties and then, will discuss how speakers vary regarding the distribution of this element (2.2.2).

i. Adjacency

Oute₁ has to precede the element that it modifies (49) and be adjacent to it. In example (49), *oute₁* can only be interpreted as modifying the DP *Anna*, and not the adverb *chthes.* On the other hand, in example (50), *oute₁* cannot modify the DP '*Anna*', but only the adverb *chthes*/'yesterday', which immediately follows the particle *oute₁.* Notice that the particle *oute₁* bears prominent stress when it is interpreted as 'neither/nor' (indicated with capital letters).[38]

(49) **Dhen** tilefonise *OUTE₁* i Anna chthes
NM called oute the Anna yesterday
'Neither did ANNA[39] call yesterday'

(50) **Dhen** tilefonise *OUTE₁* chthes i Anna
NM called oute yesterday the Anna
'Neither did Anna call YESTERDAY'

38 The interested reader can look the spectrograms for *oute₁* at appendix III.
39 The counterpart example in English is ambiguous. In order to disambiguate it, special intonation is needed, which is marked with capital letters in both (49) and (50). Thanks to J. Bobaljik for the remark.

ii. Type of modification

Oute$_1$ can modify all sorts of phrases such as DPs (51), PPs (52), VPs (53), AdjPs (54) and AdvPs (55):

(51) *(**Dhen**) irthe *oute$_1$* i Anna (DP)
NM came oute the Anna
'Neither did Anna come'

(52) *(**Dhen**) pige *oute$_1$* stin Athina (PP)
NM went oute to.the Athens
'Neither did (s)he go to Athens'

(53) *Oute$_1$*[40] efage (VP)
oute ate
'Neither did (s)he eat'

(54) *(**Dhen**) ine *oute$_1$* omorfos (AdjP)
NM is oute handsome
'He is neither handsome'

(55) *(**Dhe**) grafi *oute$_1$* sosta (AdvP)
NM writes oute correctly
'Neither does (s)he write correctly'

2.2.2 Speaker variation on NC properties of oute$_1$

Based on the previous discussion on *ou*-elements (2.1.1), it is expected that *oute$_1$* should be licensed preverbally without an NM, similarly to the other elements of the *ou*-class. This is indeed the case regarding (56), but, importantly only for a certain group of speakers (Group A/Variety A).[41] Variety A prohibits

[40] The absence of the NM in (53) is addressed in (58).

[41] An electronic questionnaire was distributed through *google docs* to thirty native speakers of Greek. Speakers aged from 25 to 55 and spoke standard Greek living in Athens. Notice that

the co-occurrence of the NM with preverbal *oute₁*, similarly to n-words of languages with non-strict NC properties (cf. *nessuno* (8)):

(56) *Oute₁* i Anna (***dhen***) tilefonise *Variety A*
oute the Anna NM called
'Neither did Anna call'

Nonetheless, there is a second variety of speakers who is less strict, in the sense that this variety does not consider infelicitous the structure in (56) with the NM co-occurring in the structure with preverbal *oute₁*. What is important is that speakers of variety B consider both structures acceptable with or without the presence of the NM as illustrated in (57).[42] However, also for speakers of variety B, the preferred structure is the one without the NM, similarly to speakers of variety A, in which *oute₁* retains its non-strict NC properties.

(57) *Oute₁* i Anna (**dhen**) tilefonise *Variety B*
oute the Anna NM called
'Neither did Anna call'

Moreover, both varieties exclude the co-occurrence of *oute₁* with an NM when this immediately precedes the verb as seen in (58). The presence of the NM *dhen* with *oute* when the latter modifies the verb results in strong ungrammaticality in all variants:

(58) *Oute₁* (***dhen**) efage *Variety A/B*
oute NM ate
'Neither did (s)he eat'

Finally, *oute₁* can license other n-words without an overt NM for all speakers in accordance to its non-strict NC properties (*negative spread*):

linguists' intuitions also vary, i.e. Athanasia Asyllogistou is speaker of variety A, while Elena Anagnostopoulou is speaker of variety B. My own intuitions side with variety A.

42 As mentioned (fn.38), the interested reader can find spectrograms for *oute₁* in appendix III.

(59) *Oute$_1$* efere *tipota* *Variety A/B*
oute brought n-thing
'Neither did (s)he bring anything'

2.3 Oute$_2$ ('even')

As mentioned above, *oute* with the meaning of 'even' is named *oute$_2$* for convenience. In what follows, the properties of this element are presented, as well as speaker variation regarding its distribution.

2.3.1 Syntactic properties of oute$_2$

i. Adjacency

Similarly to *oute$_1$*, *oute$_2$* has to be adjacent to and precede the element that modifies (60-61). The particle *oute$_2$* in (60) modifies the DP Anna, similarly to *oute$_1$* in (49) above.[43] *Oute$_2$* cannot modify the DP '*Anna*' in (61), similarly to *oute$_1$* in (50)[44], but only the element that immediately follows, namely the adverb *chthes*/'yesterday'.

(60) **Dhen** tilefonise *oute$_2$* (kan) i Anna chthes
NM called oute (kan) the Anna yesterday
'Even Anna didn't call yesterday'

(61) **Dhen** tilefonise *oute$_2$* (kan) chthes i Anna
NM called oute kan yesterday the Anna
'Anna didn't call even yesterday'

---

43 The counterparts with *oute$_1$* are repeated for convenience:
(49) Dhen tilefonise *OUTE$_1$* i Anna chthes
NM called oute the Anna yesterday
'Neither did ANNA call yesterday'
(50) Dhen tilefonise *OUTE$_1$* chthes i Anna
NM called oute yesterday the Anna
'Neither did Anna call YESTERDAY'

44 See the footnote above.

ii. Type of modification

Oute₂ just like *oute₁*, can modify all sorts of phrases such as DPs (62), PPs (63), VPs (64), AdjPs (65) and AdvPs (66):

(62) *(**Dhen**) irthe *oute₂* (kan) i Anna (DP)
NM came oute kan the Anna
'Even Anna didn't come'

(63) *(**Dhen**) pige *oute₂* (kan) stin Athina (PP)
NM went oute kan to.the Athens
'(S)he didn't even go to Athens'

(64) *Oute₂* (kan) pu (***dhen**) efage (VP)
oute kan that NM ate
'(S)he didn't even eat'

(65) *(**Dhen**) ine *oute₂* (kan) omorfos (AdjP)
NM is oute kan handsome
'He is not even handsome'

(66) ***(Dhe)** grafi *oute₂* (kan) sosta (AdvP)
NM writes oute kan correctly
'(S)he doesn't even write correctly'

2.3.2 Speaker variation on NC properties of oute₂

Speaker variation is also attested in the case of *oute₂*. However, preferences regarding the distribution of the NM are reversed. Variety A now requires the presence of the NM with preverbal *oute₂* (67). Recall that variety A excludes the NM in preverbal constructions with *oute₁* (cf. (56)):

(67) *Oute₂* (kan) i Anna *(**dhen**) tilefonise *Variety A*
oute kan the Anna NM called
'Even Anna didn't call'

By contrast, variety B shows more flexibility. At first sight, it seems that *oute₂* can occur with or without the NM (68), as was also seen with *oute₁* (57), but the picture is more complex. First, variety B shows reverse preferences regarding the presence of the NM; in the case of *oute₂*, variety B displays a bias towards the structure **with** the NM following the single licit structure of variety A (cf. (67)). Recall that the opposite pattern holds with *oute₁*, in that the structure **without** the NM is the preferred one for speakers of variety B, following again the single licit structure of Variety A (cf. (56)).

(68) *Oute₂* kan i Anna (**dhen**) tilefonise *Variety B*
oute kan the Anna NM called
'Even Anna didn't call'

Examples like the one above have driven researchers, such as Giannakidou (2007), to argue that the NM is generally optional with *oute*.[45] I have already shown that the picture is much more complex, as there are differences in the distribution of *oute₁* and *oute₂* and there are two groups of speakers which show different syntactic preferences. Speakers of variety A always require the NM with *oute₂*, while they exclude it with *oute₁*, whereas speakers of Variety B are more flexible in licensing *oute₁* and oute₂ with or without the NM.

Interestingly, if a heavy DP intervenes between *oute₂* and the verb, then an NM is needed to render the structure licit also for speakers of Variety B, as illustrated in (69).

45 Giannakidou (2007) makes no distinction regarding the syntactic properties of *oute₁* and *oute₂*. Her analysis though concerns *oute₂*.

(69) *Oute₂* kan i mama tis filis mu *(**dhen**) tilefonise
oute kan the mother the friend mine NM called
'Even the mother of my friend didn't call'

Whether the difference between (68) and (69) should be attributed to prosodic factors is not clear. As the reader can see in Appendix II, there is no evidence that these examples differ with respect to the number of phonological phrases.[46] What the data in (68) and (69) show is that speakers of variety B are more flexible with regard to the presence of the NM with preverbal *oute₂,* but they are so only if specific syntactic requirements are met (i.e. heavy vs. light associate DP).[47]

Turning to verb modification, variety A and variety B share the same pattern just as they do with *oute₁* when it modifies the verb. *Oute₂* blocks the NM in verb modification constructions in structures where the associate of the particle *oute₂* is the verb, just as was seen to be the case with *oute₁* in example (58).

(70) *Oute₂ kan* (***dhen**) tilefonise *Variety A/B*
oute kan NM called
'(S)he didn't even call'

Finally, negative spread is permitted with *oute₂* for all Greek speakers, similarly to *oute₂* in (59). Note though that for variety A negative spread is licensed as long as *oute₂* modifies the verb; otherwise, an NM is needed for speakers of this variety (cf. (67)):

(71) *Oute₂* kan efere *tipota* *Variety A/B*
oute kan brought n-thing
'(S)he didn't even bring anything'

46 Thanks to Stella Gryllia for the discussion on these data.
47 The spectrograms for *oute₂* are included in appendix II.

In sum, both variety A and B of Greek have in common that the NM is excluded when *oute₁* and *oute₂* modify a verb and appear adjacent to it. However, there is speaker variation regarding the distribution of the NM when *oute* appears in preverbal position; the different syntactic distribution of *oute₁* and *oute₂*, and the effect of speaker variation between the two varieties is summarised in Table 3 with respect to DP modification. As shown in Table 3, the first group of speakers excludes the NM with *oute₁*, while it requires it with *oute₂*. On the other hand, the second group of speakers is more flexible in licensing *oute₁* and *oute₂* with or without the NM. These facts, the strict/non-strict distribution of *oute* between the two groups of speakers, but also the different distribution of *oute* within the same variety of speakers depending on the associate (cf. DP vs. VP modification), need to receive an account within a theory of NC.

Table 3: licensing of an NM with preverbal *oute* in DP modification

DP modification	***Oute₁/'neither, nor'***	***Oute₂/'even'***
Variety A	(*NM)	*(NM)
Variety B	(NM) preferred structure without the NM	(NM) preferred structure with the NM

On the basis of this discussion, I conclude that Greek is a hybrid language and not a strict NC language, contrary to what has been assumed in the literature so far. In the next section, I will show that there are more hybrid languages that behave similarly to Greek.

2.4 More hybrid languages: the case of Hungarian

The case of Greek is not unique. Hungarian also has two classes of n-words. Surányi (2006) argues that Hungarian is a hybrid NC language with two distinct classes of n-words.[48] Elements of one class, the *s*-class, as Surányi names it, mnemonic for the initial morphological *s(e)* particle of all n-words, behave like

[48] Surányi (2006) adopts a quantificational analysis for Hungarian n-words which I am not pursuing here.

'regular' n-words of a strict NC language. They need to co-occur with the NM *nem* both in preverbal and post-verbal position (72-73):

(all Hungarian examples are adopted from Surányi, 2006)

(72) *(**Nem**) jött el[49] *senki*
NM come SUF[50] n-body
'Nobody came along'

(73) *Senki* *(**nem**) jött el
n-body NM come SUF
'Nobody came along'

On the other hand, n-words modified by the element *sem*, pattern with negative elements of a non-strict NCL. Preverbally they exclude the NM (74), post verbally they require it (75):

(74) *Senki sem* **(*nem)** jött el
n-body sem NM come SUF
'Nobody came along'

(75) *(**Nem**) jött el *senki sem*[51]
NM come SUF n-body sem
'Nobody came along'

Similarly to n-words in non-strict NC languages (cf. *nessuno* in Italian in (11a)), *sem*-elements can license one or more post verbal n-words (the phenomenon of

[49] *El* is a verbal prefix/suffix. Note that the verb in negative clauses appears to its left Surányi 2006).
[50] SUF stands for suffix
[51] The original example is the one in (i), which I have simplified for reasons of presentation:
(i) (**Senki sem*) **nem** jött el (*senki sem*)
n-body sem NM come SUF n-body sem
'Nobody came along'

negative spread) when they appear preverbally; the n-words licensed are either *s*-elements or *sem*-elements. The latter case is shown in (76):

(Surányi, 2006)

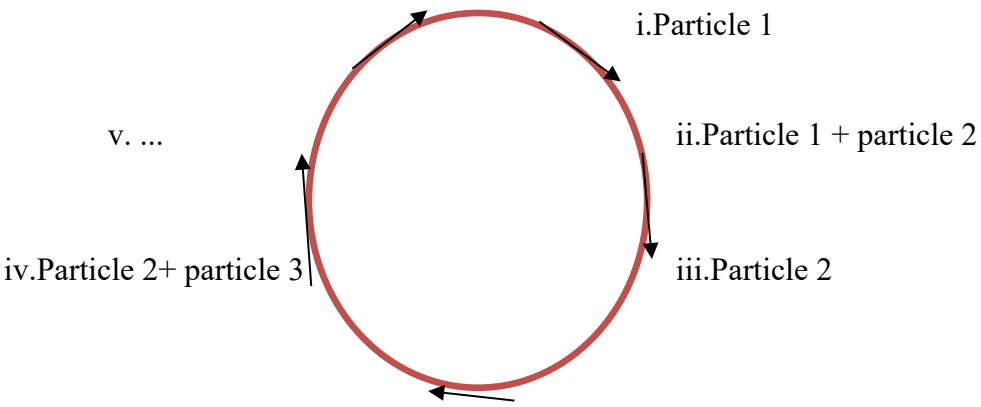
(76) *Senki sem* jött el *sehova* (*sem*)
n-body sem come SUF n-where sem
'Nobody came along anywhere'

2.5 Jespersen cycle and hybrid languages

Before proceeding to an analysis of hybrid languages, let me make a remark with respect to how these data fit into the Jespersen cycle. Jespersen (1917) observed that negative particles change in the course of time in the following way: at some point, the basic negator, the negative particle (*particle*$_1$), loses its negative force, it is 'weakened', and a second particle (*particle*$_2$)[52] co-occurs with the negative *particle*$_1$ to strengthen its meaning. Later on, the weakened particle, *particle*$_1$, becomes obsolete and *particle*$_2$ takes over the role of expressing negation on its own. *Particle*$_2$ will participate in the same process at some point; it will also lose its negative force, it will be 'weakened', and another particle, *particle*$_3$, will co-occur with *particle*$_2$ to enforce its meaning and eventually replace it. The process accordingly resembles a cycle, repeats itself for all participating negative elements; a particle is 'weakened', it is strengthened by the presence of another particle which eventually replaces it and so on.

52 The factors which determine which particular element is able to strengthen the meaning of the weakened particle (*particle*$_1$) remain unknown for the time being.

(77) Jespersen's cycle



A natural question arising therefore is how the two classes of n-words in Greek fit into the Jespersen cycle. One possible answer could be to analyse all *ou*-elements as manifestations of *particle*$_1$ in the cycle, since *ou*-elements were the only available n-words. At some point in late antiquity another class evolved independently (see Horrocks, 2014) and started being used in parallel with *ou*-elements. Note, however, that the new constellation differs from the historical process described by Jespersen; in his procedure, the new particle, *particle*$_2$, is introduced to enforce the meaning of the weakened negative particle, *particle*$_1$; so *particle*$_1$ and *particle*$_2$ have to co-occur in the same sentence. However, in the case of Greek, speakers can choose between *ou*-elements and 'regular' n-words; they can either use an *ou*-element preverbally, in which case they omit the NM, or they can use a 'regular' n-word, in which case they have to introduce an NM. This is the stage where Greek stands right now, where both classes are used by speakers, and we predict that 'regular' n-words will prevail (this will be the stage where *particle*$_2$ stands on its own).

A natural question that arises is why this process has not been accomplished yet. In the case of Greek, this process takes centuries, if not millennia, as Ancient Greek was spoken at least 2.500 years ago. One possible answer might be that the completion of the circle actually has already happened because *ou*-elements are used in different linguistic environments than 'regular' n-words. Recall that in post verbal structures, speakers prefer 'regular' n-words, whereas in preverbal ones, when they want to express emphasis, speakers use

ou-elements (though they do not have to do so). So, *ou*-elements have still survived because they are preferred in emphatic structures.

Regarding *oute*$_1$ and *oute*$_2$ ('neither' and 'even' respectively) which have no counterpart in the class of 'regular' n-words, one could argue that variety B provides evidence for the evolution of *ou*-elements in accordance with Jespersen's cycle; *oute* is in a process of becoming a 'regular' n-word, always co-occurring with an NM. But one should be careful before reaching a hasty conclusion, as we would still have to account for the fact that all speakers of variety A and variety B prohibit the presence of the NM with both *oute*$_1$ *and oute*$_2$ in verb modification constructions. There is no evidence at the moment that such structures are in a process of change, as the NM is strongly excluded. But even if this happens at some point, one would still have to provide a synchronic account for how the system works at present, when two classes of n-words with strict and non-strict NC properties co-exist and are used at the same time by the same native speakers.

So far, theories of NC have not dealt with languages which show such hybrid properties, including a group of n-words with strict NC properties and another one with non-strict NC ones.[53] My goal in the following chapter is to argue that current analyses on NC fail to account for the above data and to provide an alternative analysis which can capture the Greek facts and similar facts from other hybrid lagnuages.

[53] An alternative would be to consider the flexibility of variety B as evidence for competition of parallel grammars (Kroch 1982, 1989). Although tempting as an idea, it still remains to be answered why speakers which are generally flexible with the distribution of *ou*-elements never show any kind of flexibility in VP modification. Similar restrictions apply in Hungarian, as well as in other languages in which speaker variation is attested with respect to the distribution of specific n-words.

Chapter 3

An analysis of Negative Concord

Having presented the empirical background of Greek NC in detail, we are now in a position to see whether current analyses on NC can account for the above data.[54] More specifically, I will investigate whether a syntactic analysis along the lines of Zeijlstra (2004) can capture hybrid NCLs, languages in which there are elements both with strict and non-strict properties (3.1). First, I present how this feature system works (3.2), then I identify the theoretical and empirical challenges this theory faces in its current form when it comes to the Greek data with respect to quantificational data (3.3.1), the distribution of NMs in elliptical answers (3.3.2) and with preverbal elements (3.3.3). In the last section (3.4), I summarize the findings.

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54 I refrain myself from presenting an overview of the vast literature on Negation and the proposed accounts for the phenomenon of Negative Concord.

In short, two main approaches have been advocated for the status of n-words and, hence, to account for the phenomenon of NC. The first approach is the *negative quantifier* approach which argues that n-words are semantically negative elements. This approach takes every n-word to be semantically negative (Zanuttini, 1991; Haegeman & Zanuttini, 1991, 1996; Haegeman, 1995). This analysis considers that multiple negative elements result into one semantic negation through an absorption mechanism (Haegeman & Zanuttini, 1996). This mechanism removes unwanted instances of logical negation under special conditions. Negative elements must move (overtly or covertly) to SpecNegP, where they form a complex specifier and undergo absorption. The absorption mechanism was inspired by the wh-absorption mechanism proposed for wh-questions (Higginbotham & May, 1981; May, 1985). Similarly to the multiple instances of wh-elements which result into one negation, multiple instances of negation are claimed to result into one semantic negation. Syntactically, multiple negative elements in a sentence contain a single operator which binds any number of variables. This approach has been criticized, not only because the parallelism cannot hold between wh-elements and n-words, but also because this account cannot make the right typological predictions. Languages should generally license DN and NC readings, contrary to case. In addition, it makes no distinction between strict and non-strict NCLs. For a criticism of the quantificational approach see Giannakidou (2002), Penka (2011), Zeijlstra (2004), among others.

The second approach adopts the opposite assumption, namely that n-words are semantically non-negative elements, and they are special types of NPIs (Laka, 1990; Ladusaw, 1992; Giannakidou, 1997 among others). If n-words are analyzed as non-negative elements it follows immediately that an NM is required with n-words, as well as the fact that n-words may appear in non-negative environments. Similar to indefinites, n-words contribute a free variable and a predicative condition on that variable. Zeijlstra's analysis which is extensively discussed in this thesis adopts the indefinite analysis of n-words.

3.1 Zeijlstra's (2004) theory on NC

3.1.1 Formal and semantic features

Mismatches between morphology and meaning are encountered in all languages. These are cases in which a morphological element seems to be superfluous and does not contribute to the semantics of the clause. Such a case is, for example, the presence of person/number features on the verb, which are also present on the subject. Since the respective features are interpreted on the subject, there seems to be no reason for their repetition on the verb.

Greek

(78) Tha pao$_{\text{1st person, singular}}$ ego$_{\text{1st person, singular}}$
will go I
'I will go'

It is standardly assumed in the literature that heads come with a set of features; the element that produces the mismatch is thought to bear uninterpretable features. Uninterpretable features, [uF], have to be checked by an element with the respective interpretable features, [iF], in order for the derivation to be licit; [iF] and [uF] have to be in a proper syntactic relationship, as will be shown. In the above example, the uninterpretable features of the verb have to be checked by the [iF] of the pronoun.

The phenomenon of NC has been analysed as another case of such a mismatch between morphology and semantics by Zeijlstra (2004). Zeijlstra's (2004) theory is a syntactic theory on NC the core idea of which is that NC presents an instance of multiple agreement between an element with [iF] and multiple elements with [uF] (see Ura, 1996; Hiraiwa, 2001; cf. Anagnostopoulou (2005) on Multiple Agree). Multiple elements with uninterpretable features, [uF], check their features against an element which carries interpretable ones, [iF], through the operation *Agree* (Chomsky, 2000, 2001). According to Chomsky, *Agree* establishes a relation between two features of the same kind. An element with an uninterpretable feature, [uF], needs to have its [uF] checked by an element bearing a feature of the same kind

which is interpretable, [iF]. The element with [uF] is said to *probe* for a goal, an element with the respective [iF].

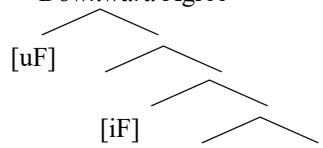
Motivation for multiple agreement (Multiple Agree) e.g. languages in which multiple elements in nominative case appear with a single verb comes from examples such as (79) from Japanese (Hiraiwa, 2000). Since the verb 'think' is the only element that can check nominative case features, it enters into multiple agree valuation with nominative case features.

(79) John*ga* yosouijouni nihonjin*ga* eigo*ga*
John.NOM than-expected the.Japanese.NOM English.NOM
hido*ku* kanji*ta*.
bad.INF think.PAST
'It seemed to John that the Japanese are worse speaking English than he had expected'

In addition, in order for the element with [iF] to check multiple instances of the same [uF], feature checking takes place in an *upward* fashion such that interpretable features are higher than uninterpretable ones.[55] For instance, all n-words with [uNEG] features must be in the c-command domain of an element with [iNEG]. This view of *downward* valuation which has been advocated by Merchant (2011) and Wurmbrand (2011, 2012, 2014) is also adopted by Zeijlstra (ibid.) is illustrated in (80).[56]

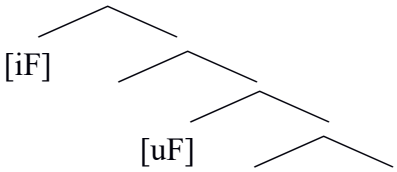
[55] This view deviates from the view of feature checking in which the element with [iF] is c-commanded by the element with [uF], as in previous literature not assuming *Agree* (Lasnik & Saito 1991), den Dikken (1995), and in Chomsky (2000, 2001) and many others; see most recently Preminger & Polinsky (2015):

(i) *Downward* Agree



[56] Wurmbrand calls it *Reverse Agree.* For more on this see 4.2.

(80) *Upward* Agree



The above considerations lead to the following definition of *Agree* (Zeijlstra, 2012):

(81) α can Agree with β iff
a. α carries at least one uninterpretable feature and β carries at least one matching interpretable feature
b. β c-commands α
c. β is the closest goal to α

A natural question that arises is which elements carry [iNEG] and which ones [uNEG] in NC.

3.1.2 Typology of n-words and NMs

Zeijlstra's (2004) answer to the question concerning the distribution of interpretable/uninterpretable features is that all n-words in both strict and non-strict NC languages are semantically non-negative indefinites which bear [uNEG] features. The difference between strict NC and non-strict NCLs resides in the different status of NMs in indicative clauses.[57] He argues that NMs in strict NCLs carry a [uNEG] feature, while NMs in non-strict NCLs carry an [iNEG] one. The resulting typology of n-words and NMs in NCLs is provided in (82). I am leaving aside for the moment the arguments motivating the status of each element, as these will be discussed in detail in the following section and I am focusing on a description of the way in which the system works:

57 Zeijlstra argues that if there is a different NM for negative imperatives and subjunctives, then its status may differ semantically.

Typology of n-words and NMs in NCLs

(82)	N-words in strict and non-strict NCLs:	[uNEG]
	NMs in strict NCLs:	[uNEG]
	NMs in non-strict NCLs:	[iNEG]

As mentioned above, an element with [iNEG] needs to c-command all [uNEG] features. In non-strict NCLs, for example, in which NMs carry [iNEG], an n-word appears post verbally, *Agree* takes place between the NM and post verbal n-words. Since there is no NM with preverbal n-words, a covert operator introducing semantic negation is assumed to be present. Zeijlstra argues that this operator is an adverbial operator which introduces Boolean negation and binds all free variables under existential closure:

(83) $[[Op\neg]] = \neg (\exists)$

In this way, all free variables introduced in *v*P or below vP are bound by the existential quantifier introduced with the $Op\neg$. One such variable bound by the negative operator is the event variable *e* as shown in (84):

(Zeijlstra, 2004)

(84) *Nessuno* ha telefonato
n-body has called
'Nobody has called'
$\neg (\exists)e, \exists x[call'(e, x)]$

So, NC in cases without an NM as in (84) is the result of a multiple Agree operation between the covert operator ($Op\neg$) introducing semantic negation, which is situated in SpecNegP, and n-words carrying [uNEG] features (which do not introduce semantic negation). By hypothesis then, this operator is always present in strict NC languages, since both NMs and n-words bear [uNEG] features.

3.2 Applying Zeijlstra's (2004) theory in NCLs

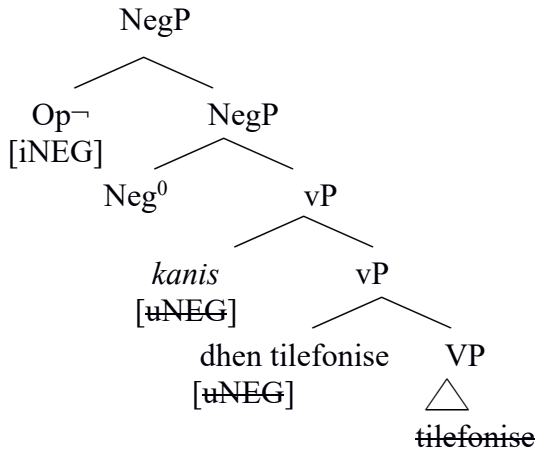
Consider an example from Greek with 'regular' n-words showing strict NC properties under the analysis of Zeijlstra (2004). Since the NM bears [uNEG] features (see (82) above), a covert operator with [iNEG] has to be present, otherwise the derivation crashes. The presence of the OP is predicted due to the [uNEG] features of *kanis* in (85a) below. The n-word *kanis*, projects a category Neg^0 and in the specifier position of this projection, SpecNegP, the covert operator (Op¬) is present which carries [iNEG] as shown in (85b).

(85) a. Kanis **dhen** tilefonise
n-body NM called
'Nobody called'
b. [NegP $OP^{\neg}_{[iNEG]}$ Neg^0[vP $kanis_{[\sout{uNEG}]}$
dhen$_{[\sout{uNEG}]}$ tilefonise]]

Feature checking takes place under Spec-head agreement in NegP, and the [uNEG] features are checked, as we can see in the syntactic representation in (86). Agree is subject to locality conditions, which means that the NM and the n-word have to be in the same phase as the negative operator, or on the phase edge of the lower phase following Chomsky's Phase Impenetrability Condition (2000, 2001) regarding the accessibility of an element for a syntactic operation.[58] Under Multiple Agree, the NM *dhen* and the n-word *kanis* have their negative features checked against the same Op¬.

58 *Phase Impenetrability Condition* (Chomsky, 2001): In the structure [$_{ZP}$Z[$_{HP}$α[H YP]]], with H and Z the heads of phases, the domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

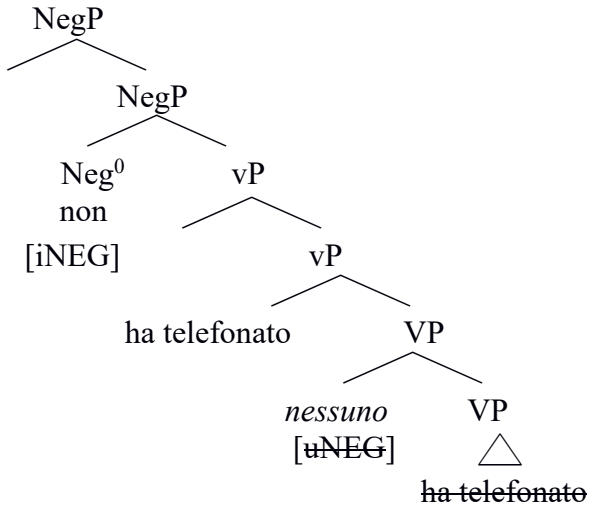
(86)



In non-strict NCLs, post verbal n-words check their features in the same way as in strict NCLs. The only difference is that it is the NM rather than the empty operator that bears [iNEG] checking the [uNEG] features of the n-word as shown in the syntactic representation of example (87) in (88):

(87) **Non** ha telefonato *nessuno*
NM has called n-body
'Nobody has called'

(88)

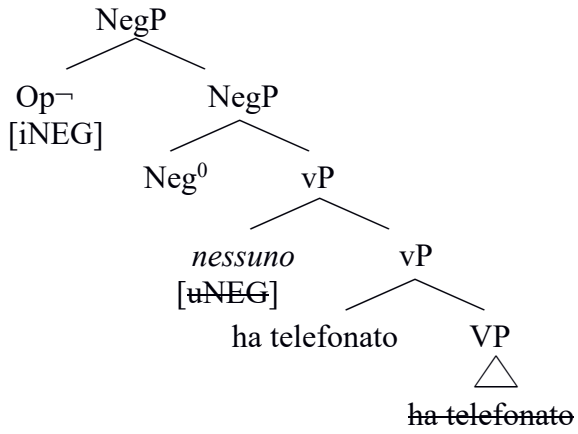


With preverbal n-words of non-strict NCLs, however, a covert operator is postulated that checks the [uNEG] features of n-words, just as in strict NCLs (cf. (86)).

(89) Nessuno ha telefonato
n-body has called
'Nobody has called'

As shown in (90), the covert operator resides in SpecNegP and checks the [uNEG] of *nessuno* under downward Agree:

(90)



3.3 Complications for Zeijlstra's (2004) theory

The goal of the current section is to show that the answer to the question of what is responsible for the strict vs. non-strict properties of a language resides in n-words and not in the properties of the NMs as Zeijlstra (ibid.) has assumed. In order to do it so, I will revaluate what Zeijlstra (2004, 2006) considers as supportive evidence for the different treatment of the NMs in terms of (un-) interpretability between strict and non-strict NCLs. This evidence concerns (i) differences in the scope interactions between semantic negation and quantificational DPs (3.3.1), (ii) differences in the syntactic distribution of NMs in elliptical answers in strict NCLs as opposed to non-strict ones (3.3.2) and (iii) an alleged optionality of the presence of NMs in strict NCLs with preverbal n-words (3.3.3). Overall, I will claim that there is no solid evidence with respect to the different status of NMs between strict and non-strict NCLs, hence an analysis of NC cannot be based on the different status of NMs.

3.3.1 Scope interactions between negation and quantificational DPs

The first difference between strict and non-strict NCLs concerns scope facts. Zeijlstra observes that in the two groups of languages, strict and non-strict NCLs, different readings obtain in the same syntactic configuration, namely when a quantificational DP c-commands an NM. The narrow scope reading of negation is restricted to non-strict NCLs, while the wide scope reading of negation is attested in strict ones.

Starting with Italian, a non-strict NCL, semantic negation *non* is argued not to take semantic scope over the quantificational DP *molto* in (91). This is expected following Zeijlstra's theory, because the NM which bears [iNEG] is in the c-command domain of the adverb *molto*. Hence, the quantificational element takes syntactic and therefore also semantic scope over the NM, as illustrated in (92).[59]

(91) *Molto* **non** ha mangiato Gianni *Italian*
much NM has eaten Gianni
a. * ¬ > much: 'Gianni hasn't eaten much'
b. much > ¬: 'There is much that Gianni hasn't eaten'

(92) [$_{XP}$ **Adv** [$_{NegP}$ **NM**$_{[iNEG]}$ V]] *non-strict NCLs*

On the other hand, in a strict NCL like Czech, the reverse reading is reported to arise, namely the quantificational DP is interpreted under the scope of negation, as shown in (93).

(93) Milan *moc* **ne**jedl *Czech*
Milan much NM.eat
a. ¬ > much: 'Milan hasn't eaten much'
b. *much > ¬: 'There is much that Milan hasn't eaten'

[59] In Zeijlstra's theory the semantic interpretation of negation overlaps with the syntactic position of the element that bears [iNEG]. In the next chapter I will argue against this assumption.

This is accounted for by Zeijlstra in terms of the hypothesis that the NM carries [uNEG], and an OP is present taking scope over the quantificational DP, as shown in (94).

(94) $[_{NegP}OP[_{vP}Adv\ NM_{[uNEG]}V]]$ *strict NCLs*

Thus, the scope facts are considered to provide evidence for the presence of a covert negative operator with [iNEG] in strict NCLs and its absence in non-strict ones, hence supporting the [iNEG] status of NMs in the latter. Note that in this account it is crucial that the *syntactic* position of the NM determines its *semantic* scope.

Challenging the scope facts

However, two strict NCLs I have tested, namely Romanian and Greek, admit both interpretations, and not only the wide scope interpretation of negation (the (a) reading), contrary to what would be expected on Zeijlstra's (2004) analysis. Both (95) and (96) from Romanian and Greek respectively are scopally ambiguous. This is unexpected since the OP is assumed to take scope over the quantificational element.[60]

60 A reviewer in Barouni (2017) points out that Zeijlstra's theory can predict the ambiguity by allowing semantic negation to take scope from a different locus, as long as the operator c-commands the negative marker as in (i) and (ii):

(i) [Op¬[Adv. NM [uNEG]]

(ii) [Adv. Op¬NM[uNEG]]

It is true that one could modify Zeijlstra and assume that the operator can appear in different syntactic positions as the reviewer has proposed; but Zeijlstra's original analysis does not expect such an ambiguity (Zeijlstra, 2013): "Although Czech *moc* ('much') c-commands the negative marker, it is outscoped by negation, both under neutral and focus intonation."

Moreover, even if we assume that the ambiguity can be accounted for in strict NCLs by Zeijlstra's original proposal, there is still a problem with the data from non-strict NCLs (as it will shown in (98) and (99)). The availability only of the surface scope reading has been disputed by the Italian and Spanish native speakers I have consulted with.

Overall, what I argue for here is that quantificational data are inconclusive as the expected scope orders do not arise.

Romanian[61]

(95) Ion *mult* **n** a mancat
John much NM has eaten
a. ¬ > much: 'John hasn't eaten much'
b. much > ¬: 'There is much that John hasn't eaten'

Greek

(96) *Poli* **dhen** efage[62]
much NM ate
a. ¬ > much: 'He didn't eat much'
b. much > ¬: 'There is much that he didn't eat'

The availability of both interpretations has been also confirmed experimentally for Greek. Baltazani (2002) has tested and confirmed the availability of both readings in constructions in which the quantificational element c-commands the NM[63] at surface structure:

(Baltazani, 2002)

(97) *Polla* provlimata **dhen** elisan
a. ¬ > much: 'They didn't solve many problems'
b. much > ¬: 'There are many problems they did not solve'

The above provides evidence against the assumption that semantic negation is interpreted in its syntactic position and that the only possible reading in strict NCLs is the one where a covert OP takes scope over the quantificational element.

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61 Thanks to Gianina Iordăchioaia for the Romanian data.

62 The two readings differ with respect to their prosodic realization, i.e. their boundary tones; example (i) ends in H%, while (ii) in L% (see the respective spectrograms which are provided in Appendix II):

(i) POLI, DHEN efage a. ¬ > much: 'He didn't eat much'
(ii) POLI dhen efage b. much > ¬: 'There is much that he didn't eat'

63 Thanks to Stella Gryllia for pointing this out to me.

Turning to non-strict NCLs, the scope facts become more complex in this group, at least as far as my own fieldwork shows which is based on a limited number of consultants. The consultant I have consulted regarding Italian accepts only the wide scope reading and excludes the narrow scope interpretation which is the only possible reading reported in Zeijlstra:

Italian

(98) *Molto* **non** ha mangiato Gianni[64]
a. ¬ > much: 'Gianni hasn't eaten much'
b. *much > ¬: 'There is much that Gianni hasn't eaten'

The same seems to hold in Spanish, another non-strict NCL. The speaker I have consulted[65] once again accepts the wide scope reading (a), while considering the narrow reading (b) marked, if not impossible:

(99) *Mucho* **no** ha comidó Juan
much not has eaten Juan
a. ¬ > much: 'Juan has not eaten much'
b. ?? much > ¬: 'There is much that Juan has not eaten'

So, one important question that arises at this point regards the factual basis of the generalizations, notably whether there is indeed a difference between strict and non-strict NCLs and what this difference is. Based on my consultants, all NCLs admit the wide scope for negation, while the reading in which the quantificational element takes scope over negation seems to be more easily obtained in strict NCLs.

In addition to the above, scope facts indicate that NMs in Greek do not differ from the ones of non-strict NCLs, as they permit the same scope interpretations. This is verified by both NMs used in Greek clauses, as will be seen below. Greek, as has been already mentioned above, has two NMs, *dhe(n)*

64 Thanks to Nino Grillo for the data in Italian.
65 Thanks to Ismael Ivan Teomiro Garcia for the data in Spanish.

and *mi(n)*. *Dhe(n)* has been argued to bear [uNEG]. The NM *mi(n)*, on the other hand, which is used in subjunctives has been claimed to bear [iNEG] features for independent reasons that are related to imperatives (Zeijlstra, 2006). Leaving aside the discussion whether *mi(n)* actually bears [iNEG], I will test the predictions that this analysis generates.

NMs which bear semantic negation should differ from the ones that do not, giving rise to different readings also within the same language when these co-occur with quantificational elements, similarly to the difference that has been claimed to occur in strict vs. non-strict NCLs. More precisely, it is expected that only the narrow scope reading should be available with the NM *mi(n)*, as no covert operator is assumed to be present in the structure due to the [iNEG] status of the NM *mi(n)*. However, contrary to expectations, both readings are attested as seen in (100). In fact, the wide scope reading seems to be preferred.

(100) *Poli* (na) **min** phiis![66]
much PRT NM drink
a. ¬ > much: 'Don't drink much'
b. much > ¬: 'There is much that I order you not to drink'

In Table 4, I contrast the findings of Zeijlstra with the judgments of my consultants:

Table 4: scope interaction between an NM and a quantificational element in NCLs

Syntactic order: Quant.> ¬	*Sem. Scope in strict NCLs*	*Sem. Scope in non-strict NCLs*
REPORTED JUDGMENTS	¬ > Quant. (from Czech)	Quant. > ¬ (from Italian)
CURRENT FINDINGS	¬ > Quant. Quant. > ¬ (from Romanian & Greek)	¬ > Quant. ??/*Quant. > ¬ (from Spanish & Italian)

[66] Speakers found it easier to perceive both readings with the verb *drink.*

Overall, it seems as if the scope facts are more complex, in that ambiguities are attested both in strict and non-strict NCLs (i.e. Greek and Spanish). In addition, the data about a non-strict NCL, Italian, is inconclusive (as findings are contrastive) (cf. Table 4). Therefore, differences in scope interpretation of negation should be attributed to independent language specific factors and cannot be considered as solid evidence for the presence of a covert negative operator or about the [i/uNEG] status of an NM, since no systematic differences have been observed between strict and non-strict NCLs.

3.3.2 Distribution of NMs in elliptical answers

The second argument that NMs fall into two classes comes from elliptical/fragment answers. It has been observed that there is an asymmetry between strict and non-strict NCLs in elliptical constructions. As shown in (101) a 'regular' element of a strict NCL requires the presence of the NM in the elided material. On the other hand, the NM is excluded in the respective example in Italian, a non-strict NCL, as seen in example (102):

(Giannakidou, 2006)

(101) Q: Who called ?
A: *Kanis* *(~~**dhen**) tilefonise~~
n-body NM called
'Nobody (has called)'

(Zeijlstra, 2006)

(102) Q: Who called?
A: *Nessuno* ~~(***non**) ha telefonato~~
n-body NM has called
'Nobody (has called)'

It is a well-known fact that semantic identity has to be preserved between the elided material of the answer and its antecedent (Merchant, 2001, 2004). Zeijlstra explains the requirement of the NM *dhe(n)* in the answer in (101) on

the basis that it bears [uNEG], hence both question and answer share the same semantics and ellipsis is licit.[67] On the other hand, in non-strict NCLs in which the NM bears [iNEG], ellipsis which would include the NM should be banned as semantic identity would not be preserved. This is the case in (102) where the NM is not included in the elided material in accordance to Zeijlstra's expectations.

However, problems arise if we turn to hybrid languages which include elements with non-strict NC properties. No difference is expected to arise between a 'regular' n-word and an *ou*-element under Zeijlstra's account, since semantic identity would be preserved with deletion of the NM *dhen*, as in (101). However, as we see in (103), in which the counterpart *ou*-element of *kanis* is present, then the NM is banned, similarly to the NM *non* in Italian in (102), and in contrast to example (101), which involves the 'regular' n-word *kanis*.

(103) Q: Who called?
A: *Oudhis* (***~~dhen~~**~~) tilefonise)~~
n-body NM called
'Nobody (has called)'

Further evidence is provided by the NM *min*. Similarly to (101) and (103) 'regular' n-words require the NM in the elided material (104), while *ou*- and *mi*-elements exclude it (105):

(104) Q: When should I call him?
A: *Pote* ~~na *(**min**) tu tilefonisis~~
n-ever PRT NM clitic call
'Never (should you call him)'

[67] Note that the semantic negative OP is not elided as it appears above the n-word *kanis*, in accordance to Zeijlstra's (ibid.) analysis. If the OP was elided, then semantic identity between the elided material and the antecedent would not be preserved.

(105) Q: When should I call him?
A: *Oudhepote/ midhepote*[68] ~~na (~~***min)** ~~tu tilefonisis~~
n-ever/ n-ever PRT NM clitic call
'Never (should you call him)'

In sum, contrary to what has generally been assumed, I have shown that fragment answers in elliptical constructions support the view that it is the type of n-word that plays the crucial role in determining the presence or absence of an NM, and not the type of NM.

3.3.3 The role of n-words in the distribution of NMs

The last piece of purported evidence for the existence of NMs with two different semantic values is based on the different distribution of NMs. If NMs were indeed categorised in two classes, semantically interpretable elements would never be expected to be optional, while semantically vacuous elements could be, since the absence of the latter would not affect the interpretation of the sentence. Since NMs in strict NCLs bear [uNEG] features, they are expected to be optional when these co-occur with preverbal n-words. This expectation is generated due to the fact that the [uNEG] feature on a preverbal n-word is sufficient for assuming a covert operator in the representation, thus there is no obvious reason for the presence of the NM (see Penka (2011) on this point).

However, this expectation is not fulfilled; preverbal *ou*-elements exclude the NM when they appear preverbally with both NMs, as shown in (106) and (107), while 'regular' n-words always require an NM as seen in (108) and (109). The specific properties of n-words are systematic, i.e. indifferent to the type of the NM they co-occur with. This fact remains unexplained under theories which consider all n-words to have the same properties but allow NMs to differ in their semantics.

[68] *Midhepote* is stylistic in use. However, the difference with respect to the obligatory presence of the NM in (104) and its ban in (105) is clear to all native speakers I have consulted.

(106) *Oudhepote* (***dhen**) irthe
n-ever NM came
'(S)he never came'

(107) *Oudhepote* na (***min**) erthis
n-ever PRT NM come
'You should never come'

(108) Pote ***(dhen**) irthe
n-ever NM came
'(S)he never came'

(109) *Pote* na ***(min**) erthis
n-ever PRT NM come
'You should never come'

Overall, I have shown that there is no solid evidence that NMs of NCLs differ with respect to their semantic value. In addition, the data suggest that the key to this puzzle cannot lie in the type of the NM, in particular because the distribution of NMs depends on the type of n-word in hybrid languages such as Greek. What remains to be answered in the following chapter is what exactly the decisive factor is that distinguishes n-words with strict NC properties from the ones with non-strict ones (in other words what distinguishes 'regular' n-words from *ou*-elements).

3.4 Summary

In this chapter I have discussed the syntactic analysis of NC pioneered in Zeijlstra (ibid.). Although the theory can account for strict and non-strict NC languages, problems are encountered with respect to its predictions for languages that contain both elements with strict and ones with non-strict NC properties. I have provided evidence that challenges the main claim of the analysis, namely that the difference between strict and non-strict NCLs should

be attributed to the different status of the NMs. It is concluded that the distribution of NMs with pre-verbal n-words depends on the morpho-semantic properties of n-words, and not on properties of the NMs.

Chapter 4

A binary featural system

In this chapter I propose an alternative analysis which shares the basic idea proposed in Zeijlstra (ibid.) that NC is multiple syntactic agreement between an element with [iF] and many elements with [uF], but deviates from it in crucial assumptions. Following the idea of Pesetsky & Torrego (2007), specifically I adopt the view that elements come with two features, a semantic and a formal feature. Interpretable formal features receive an interpretation at LF, while semantic features cannot be read by the syntactic component. Syntax may only inspect whether a feature is valued or not. I argue that a binary system is conceptually motivated and offers greater empirical coverage (4.1-4.2). Then, I present in detail the assumptions of the new analysis and the properties of NMs and n-words in strict and non-strict NCLs (4.3). The main idea is that there is no semantic distinction between strict and non-strict NCLs, as n-words and NMs in all NCLs carry no semantic negation. What distinguishes the two groups of NCLs is a formal feature of n-words which may carry a valued or unvalued feature. Next, I apply the proposed analysis to languages with hybrid properties such as Greek and Hungarian. The system is argued to account for the differences between strict and non-strict NCLs, as well as for the ban of DN readings in the former group of languages (4.4). At the end of the chapter, I expand on the empirical advantages of the theory and its predictions it makes (4.5).

4.1 A unary system for NC

Any theory of NC must take care of two issues. First it needs to ensure that n-words receive a negative interpretation, i.e. to account for the fact that (110) receives a negative interpretation and not an affirmative one. Zeijlstra (2004) suggests that this property is explained by the assumption of a covert semantic operator in (110). Secondly, the theory must prevent overgeneration of covert operators in affirmative sentences (111). Zeijlstra's theory (ibid.) can account for this dependency as it is the presence of an n-word or an NM with [uNEG]

that triggers the presence of a covert operator. Without its presence, no covert operator is predicted to be available, a welcome result:

Italian

(110) *Nessuno* ha telefonato a *nessuno*
n-body has called to n-body
'Nobody has called anybody'

(111) Anna ha telefonato
Anna has called
'Anna called'/'*Anna has not called'

In addition, Zeijlstra's theory also has the following result: in the presence of a post verbal n-word with [uNEG], a covert OP with [iNEG] has to be assumed, and examples like (112) are expected to be grammatical. As argued for in Herburger (2001) and adopted by Zeijlstra (2004), example (112) in Spanish receives the interpretation that there is a looking event with the baby as the participant and no specific object as the theme, due to the presence of a covert OP triggered by the n-word *nadie.*

Spanish (Herburger, 2001)

(112) El bébé esta mirando a *nadie*
the baby is looking at n-body
'The baby is looking at nobody'

However, when one turns to other NCLs, such as Greek, post verbal constructions both with 'regular' n-words (113) and *ou*-elements (114) result in strong ungrammaticality in the absence of an NM, unlike what was seen above.[69] If n-words bear [uNEG] and, thus, trigger the presence of a covert

69 Example (112) in Greek is given in (i). Note that the example is grammatical only if the definite article is added, still under a very specific meaning. The interpretation of (i) is that there is a looking event by the baby with a theme probably called 'nobody', as in the mythological

negative operator, as proposed by Herburger and Zeijlstra, then the ungrammaticality of sentences with post verbal n-words is unexpected.

(113) *Irthe *pote*
came n-ever
'(S)he never came'

(114) *Irthe *oudhepote*
came n-ever
'(S)he never came'

Similar observations have been made for Afrikaans. Biberauer (2010) observes that (115) is ungrammatical, even though a post verbal NM is present. On the other hand, if a second NM is added, then the sentence becomes grammatical, as given in (116).

Afrikaans (Biberauer, 2010)

(115) * Hy kom in **nie**
he come in NM
'He doesn't come in'/'He isn't coming in'

(116) Hy kom **nie** in **nie**
he come NM in NM
'He doesn't come in'/'He isn't coming in'

---

case of *Odyssey*. This is a very different interpretation from the one discussed by Herburger (ibid.) and Zeijlstra (ibid.) in (112).

(i) To moro kitai *(ton) *kanenan*
the baby looks the n-body
'The baby is looking at someone, (called) *Nobody*'

In addition, if the n-word preceded by the definite article appears in the preverbal position as in (ii), then the same interpretation arises and not a negative one. The presence of the n-word in (ii) does not trigger a covert OP, which suggests that the interpretation of these structures should receive an independent account.

(ii) O *kanenas* kitai to moro
the n-body looks the baby
'Someone, (called) *Nobody*, is looking at the baby'

I will return to Afrikaans later on, but for the time being it suffices to note that that the presence of a covert operator with post verbal n-words faces empirical problems with certain languages (Greek and Afrikaans, as opposed to Spanish). Thus, postulatory of the covert operator in (113-115) which would prevent the derivations from crashing is not empirically justified, at least in languages like Greek and Afrikaans.

Systems like the one proposed by Zeijlstra (2004, 2008, 2012), in which requirements are imposed only by one/a set of the two elements that participates in the checking process (e.g. by the n-word/NM bearing [uNEG] and not by the element bearing [iNEG]) are *unary* ones. According to the standard view, syntactic feature relations are *unary* in that one feature which itself does not need to be licensed legitimises the presence of another feature (one exception is Case checking where the NP bearing a structural Case feature checks its [uCase] against the [uPhi] features of T or v). However, as pointed out above, the *unary* system discussed so far cannot prevent the presence of the covert operator in (113-115) which should lead to grammaticality, contrary to fact.

4.2 A binary system for NC

Building on Zeijlstra's (2004) insights, but modifying his system in some significant ways, I propose that a binary system is better suited to account for the distribution of negative expressions, in particular for the complex interaction between silent negative operators and their morphological triggers. In the system I propose, two features enter into a licensing relation, imposing licensing requirements. I propose that the relevant features are an *interpretable* feature interpreted at LF and a *formal* feature interpreted in syntax. The interpretable features are the same. What distinguishes, then, strict from non-strict NCLs is a formal syntactic feature.

A central claim of this dissertation is that any analysis of NC not only must account for the difference between strict and non-strict NCLs, but also for hybrid NCLs, such as Greek and Hungarian, in which a certain group of n-words systematically excludes the NM, while another group of n-words systematically requires it, repeated in (117) and (118) respectively for convenience:

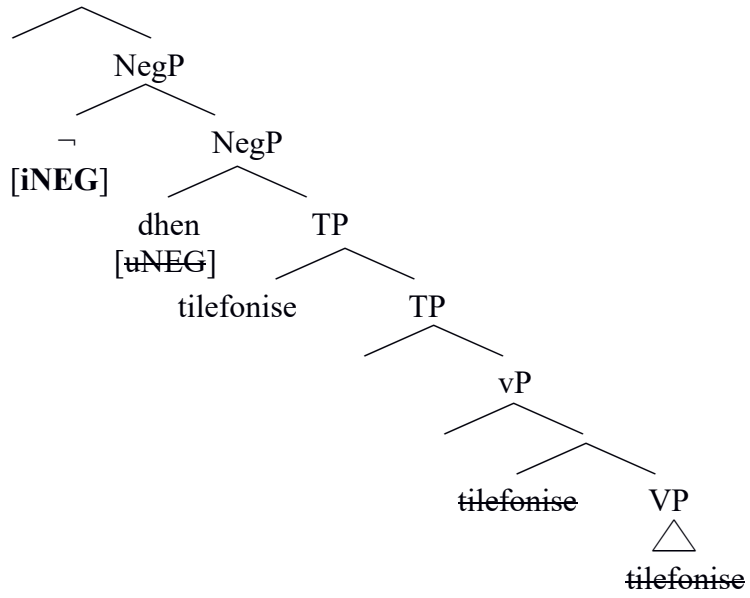
Greek

(117) *Oudhepote* (***dhen***) tilefonise
n-ever NM called
'(S)he never called'

(118) *Pote* *(**dhen**) tilefonise
n-ever NM called
'(S)he never called'

Extending Zeijlstra's idea about the presence of a negative Operator, I assume that the element that introduces semantic negation is always a semantic negative covert operator. For reasons that will become clear in the next section, this negative covert operator is present in all configurations in both strict and non-strict NCLs and it is located in the SpecNegP above the AspP.[70] Since the proposed system is symmetric, this means that the covert element, the operator, not only has an [iNEG] feature that checks the [uNEG] features of the n-words or the NM (see (119)), but it also imposes is own requirements.

(119)



70 Recall that Zeijlstra (2004) assumed that NMs in non-strict NCLs introduce semantic negation, as opposed to the ones in strict NCLs who do not, bearing [uNEG].

Under the standard analysis, an element with [iF] is interpretable at LF, it carries semantic import; feature interpretability and semantic interpretation always go together (Chomsky, 2000, 2001). In other words, there is a bi-conditional relation between feature interpretability and feature values, namely that a feature F is uninterpretable iff F is unvalued (Chomsky, 2001:p.5). However, the proposed analysis follows the view that feature interpretability and semantic interpretation are distinct, an idea pursued by several authors, among them Pesetsky & Torrego (2007), Boščovič (2009), Kuno (2011), Wurmbrand (2011, 2012, 2014), Zeijlstra (2010). All the above-mentioned authors question the correlation about the two aspects of features, interpretability and values.

More precisely, Pesetsky & Torrego (ibid.) claim that interpretable features receive an interpretation at LF, and syntax can only inspect whether a feature is valued or not. Therefore, elements come with two features, semantic and syntactic ones. As a consequence, the system should admit not only items with the features in (120a) and (120b), but also elements which are interpretable and unvalued (120c), alongside elements with uninterpretable and valued features (120d).

(120) a. [iF: val]: b. [uF: unval]
c. [iF: unval] d. [uF: val]

If a lexical item is unvalued, it has to receive a value via syntactic computation, through the operation Agree. When syntax finds an unvalued feature, it matches it with the respective valued feature by Agree, which means that what drives feature checking is valuation, not interpretability. Similar approaches, adopting the distinction between interpretability and feature valuation, have been proposed by other researchers (i.e. Boščovič (2009), Kuno (2011), Wurmbrand (2011, 2012, 2014), Zeijlstra (2010) i.a.).

One such mechanism that adopts this distinction between interpretability and valuation is the operation of *Reverse Agree* defined in Wurmbrand (2012) as in (121):

(121) *Reverse Agree*

a feature [F:unval] on α is valued by a feature [F:val] on β, iff

i. β c-commands α AND

ii. α is *accessible* to β (*accessible*: not spelled-out)

iii. α does not value {a feature of β}/{a feature F of β}[71]

Under *Reverse Agree* the higher element is not the deficient element, but the valued one, similarly to the Agree operation proposed in Zeijlstra (2004). Both approaches adopt 'downward c-command' which licenses multiple dependencies, as the lower element is the deficient element. One advantage of this approach is that the syntactic mechanism of multiple Agreement unifies different phenomena such as obligatory control, anaphor binding, polarity licensing, case, selection of verb morphology (see Wurmbrand (2011) for an overview) retaining the two relations, feature checking and feature valuation.[72]

Adopting the above-mentioned approach about the mechanism of *valuation* and based on the empirical observation that an n-word with morphological negation has to appear above the vP domain both in strict and non-strict NCLs, I propose that what distinguishes strict from non-strict NCLs is a formal [uF] syntactic feature.[73] For reasons that will become clear in the next section, I adopt the view that no NM, in either strict or non-strict NCLs carries semantic negation. The same holds for n-words, following Zeijlstra (ibid.). Therefore, what discriminates between strict and non-strict NCLs is whether elements are valued or not. Specifically, the typology proposed for NC,

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71 Condition (iii) is necessary to prevent valuation between two sisters, unless their type of features is different (see Wurmbrand, 2012, footnote 1).

72 Compare this approach to Zeijlstra's recent analysis (2014) that takes the [iF] to be part of its lexical semantics claiming that it is not the feature [iNEG/iF] itself that is interpreted at LF (Zeijlstra, 2014:p.12).

73 The analysis follows the idea I developed earlier in that strict NCLs differ from non-strict ones with respect to a morphosyntactic feature. Nonetheless, this feature was named [MORPH] in Barouni (2016) and [NEG] in Barouni (2017). The [MORPH] feature reflected the empirical observation that an n-word with morphological negation has to appear above the vP domain both in strict and non-strict NCLs. Notice that the postulation of an [i/uMORPH] feature also deviates from the standard analysis of features, where feature interpretability and semantic interpretation always go together (Chomsky, 2000, 2001).

following Wurmbrand (ibid.), is the one in (122). All n-words and NMs carry semantically uninterpretable features; hence they will be marked [uNEG]. As a result, what distinguishes them is their feature value. Thus, NMs and n-words (with morphological negation in hybrid languages) are valued,[74] while 'regular' n-words and OPs are unvalued, as seen in (122).

(122) OP: [iNEG:unval]
n-words[75]: [uNEG:unval]
n-words (with morphol. negation)/NMs: [uNEG:val]

Notice that in the proposed typology, languages are not classified into strict and non-strict ones; rather there are elements with strict and non-strict NC properties which differ with respect to their formal features. In addition, NMs are not distinguished from n-words in terms of their feature specifications and they do not differ across languages in what types of features they bear. The system only classifies elements with respect to their feature values, irrespectively whether these are n-words or NMs. This entails that a negative element, whether NM or n-word, can value the unvalued feature of the semantic negative operator, and thereby trigger a negative interpretation as long as it bears a valued feature. In sum, the proposed analysis incorporates the following assumptions:

(a) elements come with two features, a semantic and a syntactic/formal one.
(b) the difference between strict and non-strict NCLs does not reside in the status of the NMs, but in the feature value of n-word.[76]
(c) there is no distinction between strict and non-strict NCLs. Rather there are negative elements with the so called strict and non-strict

74 A detailed presentation of each element takes place in the next sections.
75 As we will see in the next chapter, it is possible for an NM to bear [uNEG:unval] if the language employs two NMs in the same sentence to express negation (i.e. French, Afrikaans).
76 Notice though that since the theory makes no distinction between n-words and NMs, the fact that the difference between strict and non-strict NCLs resides on n-words is based on linguistic facts and not on a theoretical assumption.

NC properties. There is nothing a priori excluding elements of one or the other category in any given language.

In the following sections I will explain in detail the motivation behind the proposed typology and the way Agree operates under the current assumptions.

4.2.1 Syntactic locus of NegP in NCLs

In this section I will argue that NegP is interpreted in the same position in both strict and non-strict NCLs. Scope facts with modals support the claim made in section 3.3.1 that semantic negation is not tied to its syntactic position. Evidence for this claim comes from Negative Split facts.

In Double Negation languages like English and German, negative words are traditionally analysed as quantifiers introducing semantic negation. The n-word *nobody* consists of the negative operator and the existential quantifier, as shown in (123).

(123) *Nobody*: [[nobody]] = λP.¬∃x[person'(x)&P(x)]

In certain contexts, the scope of semantic negation can be higher than the scope of the existential resulting in the so-called Negative Split phenomenon. As shown in (124) negation may be interpreted above or below the modal verb, as made explicit in (124a) and (124b) respectively. Importantly, due to the presence of the modal, the negative part is dissociated from the existential and it is interpreted in a different position (for more on negative split in DN languages, such as English or German, see Geurts, 1996; Jacobs, 1980; Rullmann, 1995; de Swart, 2000; Lechner, 2006 i.a.).

(example based on Zeijlstra, 2007)

(124) Es *muss kein* Arzt anwesend sein
there must no physician present be
a. 'It is not required that there be a physician present'
¬ > must > ∃

b. ‘It is required that there be no physician present’

must > ¬ > ∃

Turning to a traditional so-called strict NCL such as Greek, it has been shown that negation is not interpreted where it surfaces, for example in configurations where a modal verb interacts with negation (see also 3.3.1). Specifically, Iatridou & Zeijlstra (2010) have argued that the Greek modal verb *prepi/*‘must’, a positive polarity item, may take narrow or wide scope with respect to negation. Note though that the most natural reading is one in which the semantic interpretation reverses the surface order of elements, while the reading in which negation takes scope over the modal is metalinguistic or contrastive (Iatridou & Zeijlstra, 2010):

(example from Iatridou & Zeijlstra, 2010)

(125) O Yanis **dhen** prepi na figi

John NM must PRT leave

‘John must not leave’

A question therefore that arises from the present perspective is which scope readings are available in contexts in which the NM is missing, as in the case of preverbal *ou*-elements, illustrated in (126). The answer to this question will enable us to better understand whether the NegP is located at the same position in (125) and (126). Since (125) is an example of a negative sentence in a strict NC construction, while (126) is a typical representative of a non-strict NC construction, the answer then can be extended to NCLs, strict and non-strict ones.[77] In other words, we can use the results provided from a hybrid language as a tool to better understand the behaviour of non-hybrid languages.

[77] It is obvious that NegSPlit does not apply with ‘regular’ n-words, as an NM is always present in the structure.

(126) *Oudhemia* mama *prepi* na ine parousa
n-body mother must PRT be present
'No mother must be present'

In (126), the n-word *oudhemia*, resides above the modal, but is interpreted with narrow scope, similarly to (125). This means that in the semantic representation the modal may either intervene between the operator and the existential, as in (127a), or it can take scope over negation, as in (127b).

(127) *Oudhemia* mama *prepi* na ine parousa
n-body mother must PRT be present
a. 'It is not required that there be a mother present'
¬ > must > ∃
b. 'It is required that there be no mother present'
must **>** ¬ **>** ∃

This means that if the null semantic operator in (127) is located in the same syntactic position as in (125), as a consequence scope interaction between the modal and negation is correctly expected not to differ in the two cases at hand. If, on the other hand, the operator were tied to a syntactic position *above* the n-word *oudhemia,* then it is hard to see how the observed reading in (127b) arises. I conclude that the data in (127) suggest that (125) and (126) have identical semantic representations. This finding is important for two reasons. First, it shows that the position determining the semantic interpretation of the operator is not identical to its syntactic position. Similarly to DN languages, semantic negation is not interpreted where it surfaces, i.e. in the position of the n-word (or the NM). Second, NegP is located in the same position (above the AspP to anticipate the results of next section) in both strict and non-strict constructions

in hybrid languages, and — if we are correct— in both strict and non-strict NCLs.[78]

4.2.2 Status of the NMs in NCLs: [uNEG:val]

Turning to the feature specifications of NMs in NCLs, I will argue that NMs share the same features in strict and non-strict NCLs. Specifically, they do not encode semantic negation, i.e. they bear [uNEG], and they are morphologically negative elements:

(128) NMs: [uNEG:val]

I have already argued in section 3.3 that NMs have the same status in both strict and non-strict NCLs. Recall especially that since semantic identity has to be preserved in ellipsis, the only possible choice for elliptical constructions with Greek n-words is to assume that NMs do not introduce semantic negation, i.e. they bear [uNEG] (see 3.3.2). I also argued that if example (103) (repeated in (129)) is taken as supportive evidence for the [iNEG] status of the NM *dhen* (as it is excluded in elliptical constructions with the preverbal n-word), then semantic identity would not be preserved in (101) (repeated in (130)) in which the NM is obligatory. However, if the NM is assumed to bear [uNEG], semantic identity is preserved because its presence does not affect the semantics of the sentence either in (129) or (130). The difference with respect to the distribution of the NM in (129) and (130) should then be attributed to independent reasons.

(129) Q: Who called?
A: *Oudhis* ~~(***dhen**) tilefonise)~~
n-body NM called
'Nobody (has called)'

78 Zeijlstra's (2004) analysis assumes a covert operator in SpecNegP in both (125) and (126), but in a different syntactic position. In (126), NegP would stand above the DP *oudhemia* since the latter would trigger its presence.

(Giannakidou, 2006)

(130) Q: Who called ?
A: *Kanis* *(~~**dhen**) tilefonise~~
n-body NM called
'Nobody (has called)'

Regarding the formal feature of the NM, I assume that NMs carry a valued feature. The motivation for the [val] feature stems from the fact that an NM can negate a clause in the absence of any n-word. This is evidence that the covert operator is licensed, thus the unvalued features of the latter must have been valued by the NM, the only negative element in the sentence, since in its absence the sentence cannot receive a negative meaning. Moreover, the fact that the presence of an NM suffices for a sentence to receive a negative interpretation in both traditional strict (131) and non-strict (132) NCLs, leads us to propose that a valued feature is carried by the NMs in all NCLs (strict and non-strict ones).

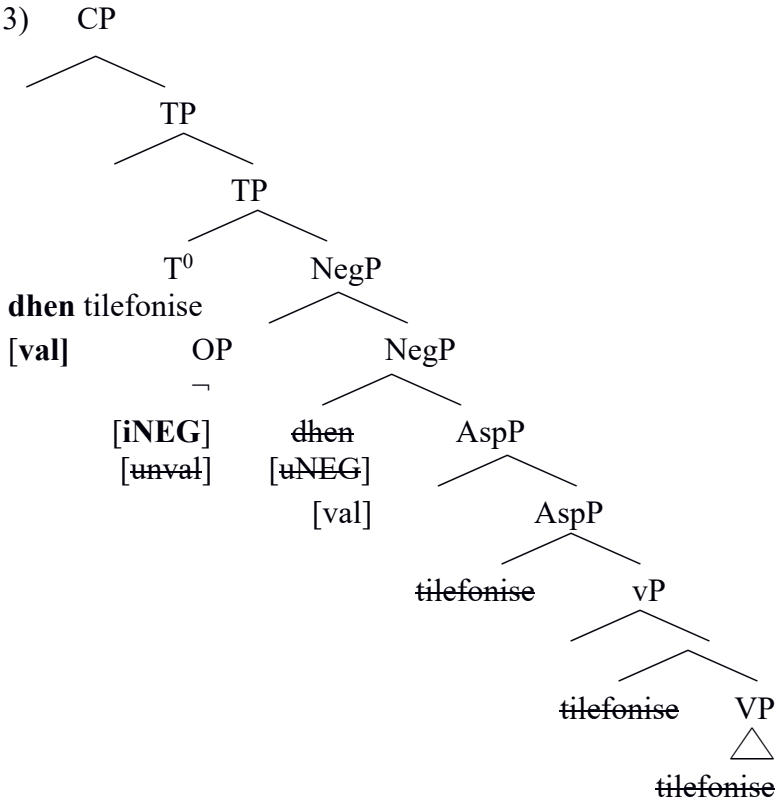
(131) **Dhen** tilefonise
NM called
'(S)he didn't call'

(132) **Non** ha telefonato
NM has called
'(S)he didn't call'

In (133) I illustrate how the derivation proceeds in the proposed analysis. Following Zeijlstra, I assume that the covert operator occupies the SpecNegP position and that the NM is located in Neg^0 which I take it to be below TP and above AspP following an extensive literature on negation. First, the [uNEG] features of the NM are checked by the [iNEG] features of the OP under downward c-command. The [unval] of the OP force syntactic movement of the NM to a higher syntactic position. I will assume that the NM can attach to the verb similarly to clitics. This will enable the verb to pick up the NM on its way

to T^0. The NM which bears [val], accordingly moves to a higher node c-commanding the OP. From that position, the NM values the [unval] feature of the OP. Thus, in the proposed analysis, the presence of the NM in a higher position is related to V movement which enables it to satisfy the syntactic needs of the covert operator, the [unval] feature.

(133)



In sum, what the derivation in (133) shows is that the [uNEG] feature on NMs is always licensed by the OP *prior* to their movement, while the [unval] feature on the OP is always licensed *after* the movement of the NM to a higher position along with the verb. Put differently, feature checking of the semantic [NEG] feature takes place below the TP level, resulting in narrow scope relative to modals, while feature valuation takes place higher in the structure. On the current proposal, NegP is relatively low, and the high occurrence of the NM is an artifact of verb movement, which collects the clitic NM on its way to T^0 or $Mood^0$.

4.3 N-words in NCLs

What has not been explained yet, is where the difference between strict and non-strict NCLs is located, a question which arises because all NMs have the same feature specification in this approach. As already anticipated, I argue that the difference between strict and non-strict NCLs resides in the properties of n-words. In agreement with Zeijlstra, I assume that n-words in all NCLs share the same semantics; they do not introduce semantic negation and bear [uNEG]. Deviating from Zeijlstra, I furthermore propose that morphology plays an important role in the syntactic distribution of negative elements, because n-words with morphological negation in hybrid languages carry [val] features, while the rest of the n-words (the ones with no negative affix) bear [unval]. Specifically, it is submitted that an n-word bears a [val] feature as long as speakers are in the position to understand that the n-word bears a prefix/suffix that is morphosyntactically/formally negative. What this means, for instance, is that speakers of Greek can deduce the morphological differences between morphosyntactically negative *oudhepote* 'never' and non-negative *pote* 'never' in a way that correlates with the fact that the former element does not need to be licensed exclusively in the context of an NM and negation, while the latter one does. Speakers in hybrid languages distinguish morphologically between the two elements, and this accounts for their different distribution. I capture this by claiming that n-words with negative morphology bear [val], otherwise they are 'regular' n-words with strict NC properties bearing [unval]. As shown in the typology in (134), there is no semantic distinction between the negative elements of strict and non-strict NCLs; rather the distinction is between elements with transparent negative morphology triggering non-strict NC properties, and elements without negative morphology, resulting in strict NC properties. This leads us to expect no clear-cut parameter between strict and non-strict NCLs in terms of the specification of NMs, leaving room for the existence of hybrid languages. Notice that the morphological requirement is posed on hybrid languages, as speakers of strict or non-strict NCLs deduce the properties of negative elements from their use, without the need to encode the presence of transparent negation on n-words.

(134) a. n-words (with transparent negative morphology in hybrid languages): [uNEG:val]
b. n-words: [uNEG:unval]

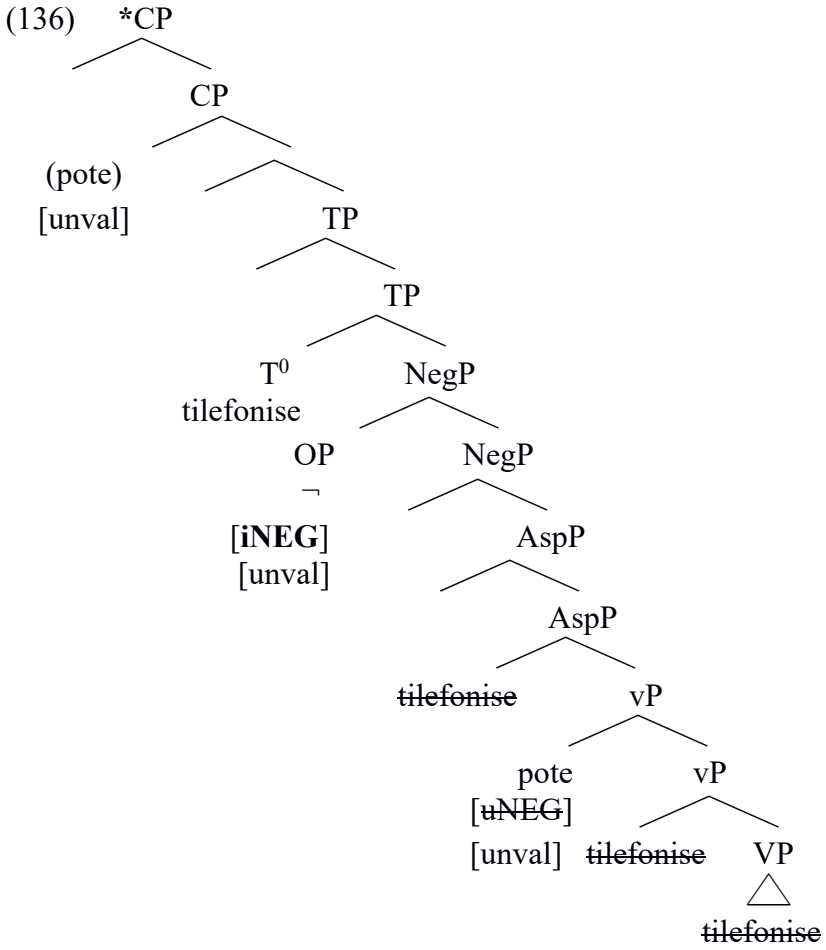
4.3.1 N-words with strict NC properties: [uNEG:unval]

As was seen in (134), 'regular' n-words, i.e. n-words without morphological negation in hybrid lanaguages, are taken to bear [uNEG:unval]. Combined with the hypothesis that the covert OP introducing semantic negation is specified [iNEG:unval], the theory predicts that n-words cannot appear without an NM which provides a feature [uNEG:val].[79] This prediction holds irrespectively of whether n-words appear in preverbal or postverbal position in the relevant languages; if [val] is missing, the current analysis predicts that the [unval] features of both the n-word and the OP cause the derivation to crash, as detailed by the representation for example (135) in (136). Note that this entails that NMs are never optional with 'regular' n-words, which is a welcome result.

(135) * (Pote) tilefonise pote
n-ever called n-ever
'(S)he never called'

79 I leave aside for the moment elements with transparent negation, such as *ou*-elements, that are attested in Greek. In the next section we will see that *ou*-words are possible candidates to value the [unval] feature of the operator.

(136) *CP



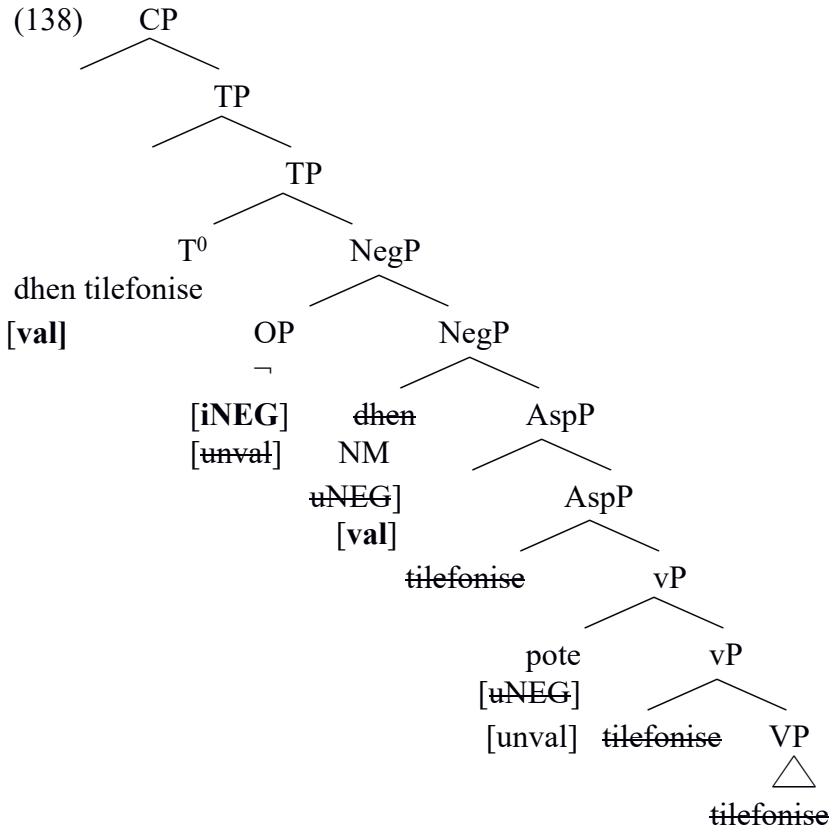
By contrast, if an NM is present, the derivation is salvaged. The example in (137) illustrates the obligatory presence of the NM with a post verbal 'regular' n-word in Greek.

(137) ***(Dhen**) tilefonise *pote*
NM called n-ever
'(S)he never called'

Turning to the details, let us attend to the steps in the derivation of (137) leading to expressions where 'regular' n-words occupy a postverbal position (138). The covert OP which is endowed with [iNEG] checks the [uNEG] features of the n-word *pote* from the SpecNegP position. Recall that I have argued that covert operators always reside in SpecNegP, which is located above AspP. The [unval]

features of *pote* are accordingly valued by the NM *dhen* which is located in Neg^0 position and bears [val]. Now that the [unval] features of the n-words have been valued, the OP requires an element with [val] in order to check its [unval] features. Since feature valuation takes place under downward c-command, movement of the NM bearing [val] is necessary so that the OP values [unval] features. NM movement is parasitic on V-movement: on its way to T^0, the verb collects the NM, which values the [unval] of the OP from T^0, as shown in (138).

(138)



Exactly the same derivation captures preverbal n-words, as in (139). The n-word has its [uNEG] features checked before it moves to the preverbal position, just like in the derivation in (138). Then, the NM attached to the verb values the [unval] feature of the operator on its way to T^0. The n-word *pote* moves to the left of the verb for independent reasons, such as focus, to a designated (focus) position after feature checking and valuation has taken place.

(139) *Pote* *(**dhen**) irthe
n-ever NM came
'(S)he never came'

The advantage of the current analysis is that the obligatory presence of the NM both with preverbal and postverbal n-words receives a straightforward explanation. As also pointed out by Penka (2011), Zeijlstra's (2004) theory cannot explain the obligatory presence of the NM with preverbal n-words as in (139), since the presence of the n-word would, in principle, suffice to trigger the presence of the covert OP. In the current analysis, the NM is always obligatory with n-words that do not encode transparent negation. This is so because the NM is the only element bearing [val] that can value the [unval] of the OP and n-words, regardless of whether these appear pre-verbally or post-verbally.

4.3.2 N-words with non-strict NC properties: [uNEG:val]

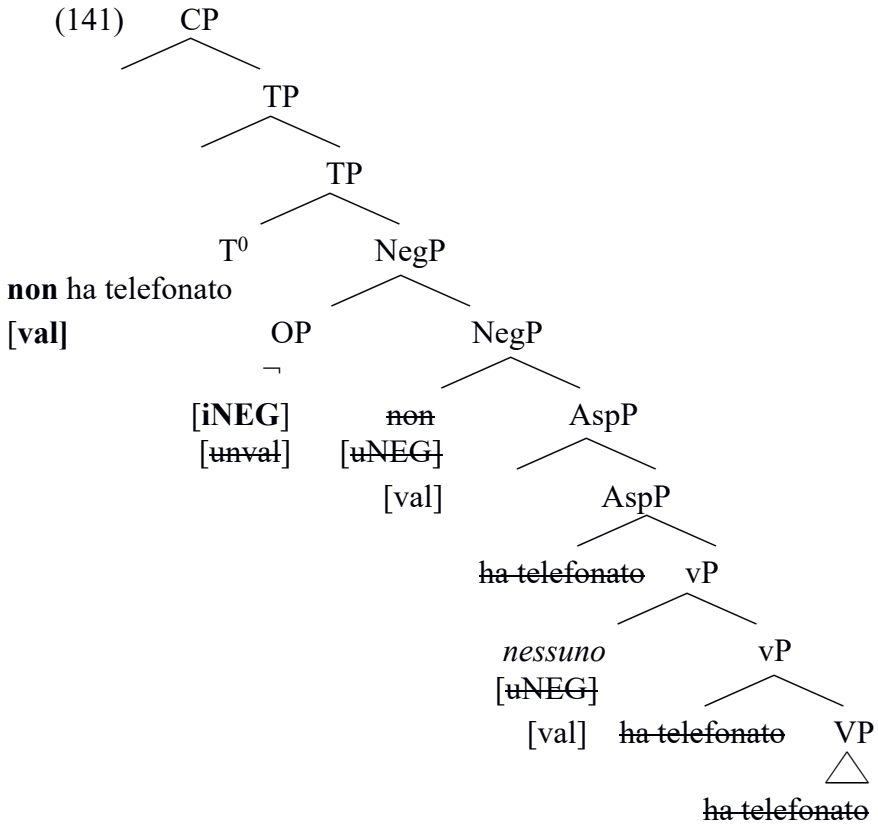
I have proposed that the difference between strict and non-strict NCLs resides in the [val] feature of n-words and that n-words carrying morphological negation in hybrid languages bear [val]. In the absence of an NM with [val], elements bearing [val] must move to a higher syntactic position, namely above the vP in order for the derivation to succeed. Recall that there is an independent motivation for n-word movement in the proposed analysis, namely that an element with a [val] feature must always c-command the OP in order to value the [unval] features of the latter, otherwise the derivation crashes. Even though we cannot, strictly speaking, assume that this is the trigger for the movement of the [val] bearing n-word since this would be an instance of 'altruistic' movement (abandoned in the theory since Chomsky, 1995), this movement is necessary in the absence of an NM. If the [val] bearing element remains vP internal, then an NM must be present.

Starting with the derivation of post verbal n-words bearing [uNEG:val], we see that although the post verbal n-word *nessuno* bears [val], an NM has to be present in the example (140). I propose that in such constructions NMs are introduced in the derivation as a Last Resort, namely to prevent the derivation

from crashing because the [unval] of the OP would remain unvalued. This is the case in (140) where the n-word is post verbal. Although an element with [val] is present, i.e. the n-word *nessuno*, the derivation crashes in the absence of an NM, since the feature of the OP remains unvalued. This is essentially so because the n-word does not c-command the OP at any point of the derivation. Thus, an NM with [val] needs to be inserted to rescue the derivation from crashing. Similarly to the structure in (138), the verb takes the NM along on its way to T^0, as demonstrated in (141), and the NM values the [unval] of the OP under c-command from the T^0 position.

(140) *(**Non**) ha telefonato *nessuno*
NM has called n-body
'Nobody has called'

(141)

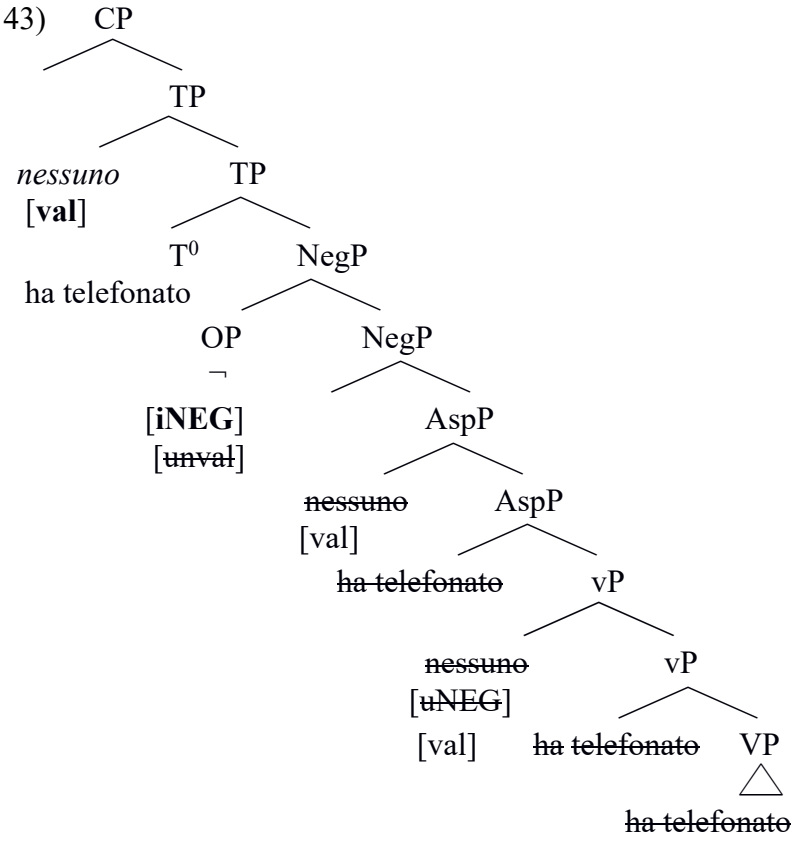


This leads to a straightforward prediction, which is empirically verified: n-words with [val] (in contrast to 'regular' n-words with [unval]) should be able to license a covert operator, because they can check the [unval] feature of the OP if they c-command it. We know that this is the case with preverbal n-words of non-strict NCLs, as shown in (142).

(142) *Nessuno* (***non**) ha telefonato
n-body NM has called
'Nobody has called'

The configuration in (142) is analyzed along the following lines. The negative element with the [val] feature, *nessuno*, has to move in order to value the [unval] of the OP under c-command. In a first step, *nessuno* has its [uNEG] checked by the OP in specvP position, as seen in (143). Then it moves to a higher position, Spec TP, where it values the [unval] of the OP. In this way, the derivation converges.

(143)



This explains why preverbal n-words with [val] are incompatible with an NM; when an element with [val] moves to a preverbal position, the NM does not need to be inserted as a Last Resort and is, therefore, banned for economy reasons.[80]

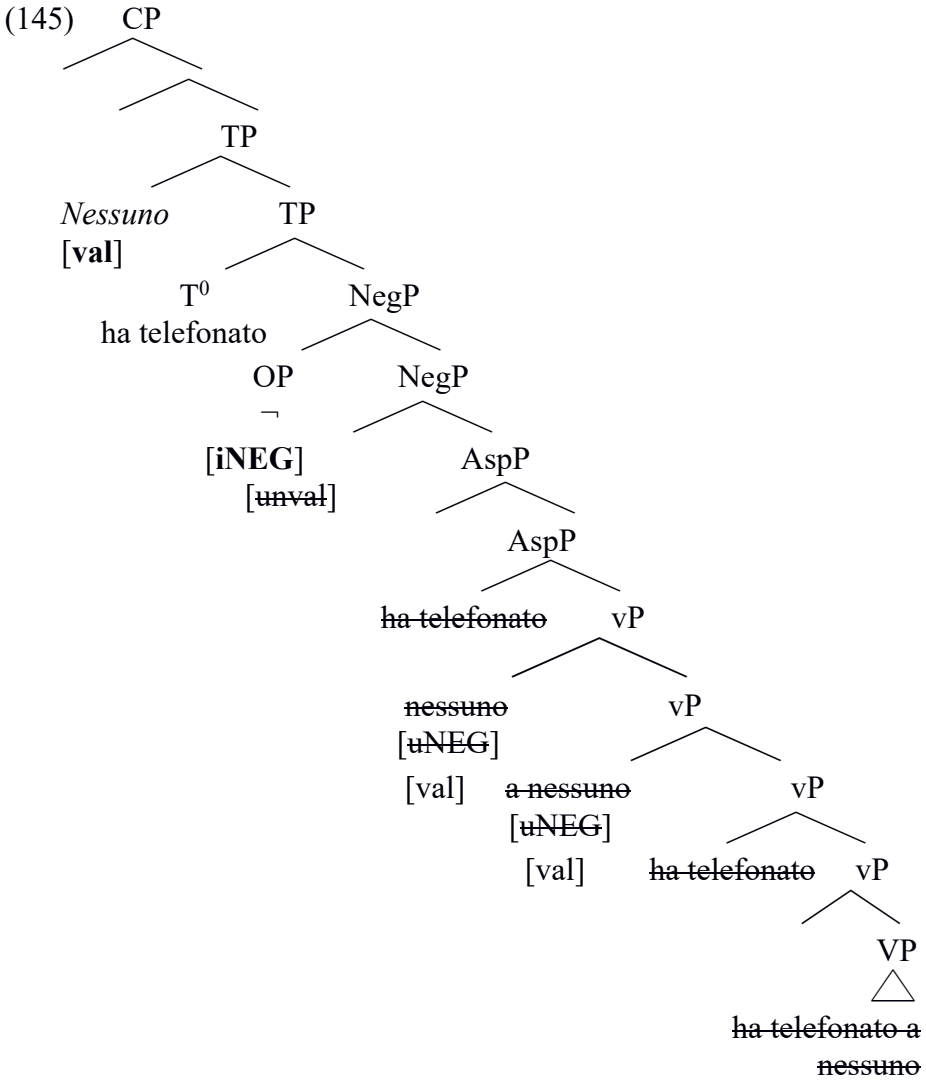
Turning next to negative spread in non-strict NCLs, this phenomenon receives a straightforward explanation, too. As long as one n-word with [val] appears above the vP, the sentence is predicted to be grammatical and post verbal n-words will be licensed (case of negative spread). That this is actually the case, can be seen in (144).

(144) *Nessuno* ha telefonato a *nessuno*
n-body has called to n-body
'Nobody has called anybody'

As sketched in (145), the [uNEG] features of the n-words are checked in SpecvP by the OP. Due to the absence of the NM, an n-word with [val] has to move above the NegP. A possible candidate is the subject which is higher in the structure. *Nessuno* values the [unval] of the operator and the derivation is legitimate.

80 Note though that the analysis leaves some room for the co-occurrence of an NM with a preverbal n-word with [val] under a Double Negation reading (see section 4.4. below).

(145)



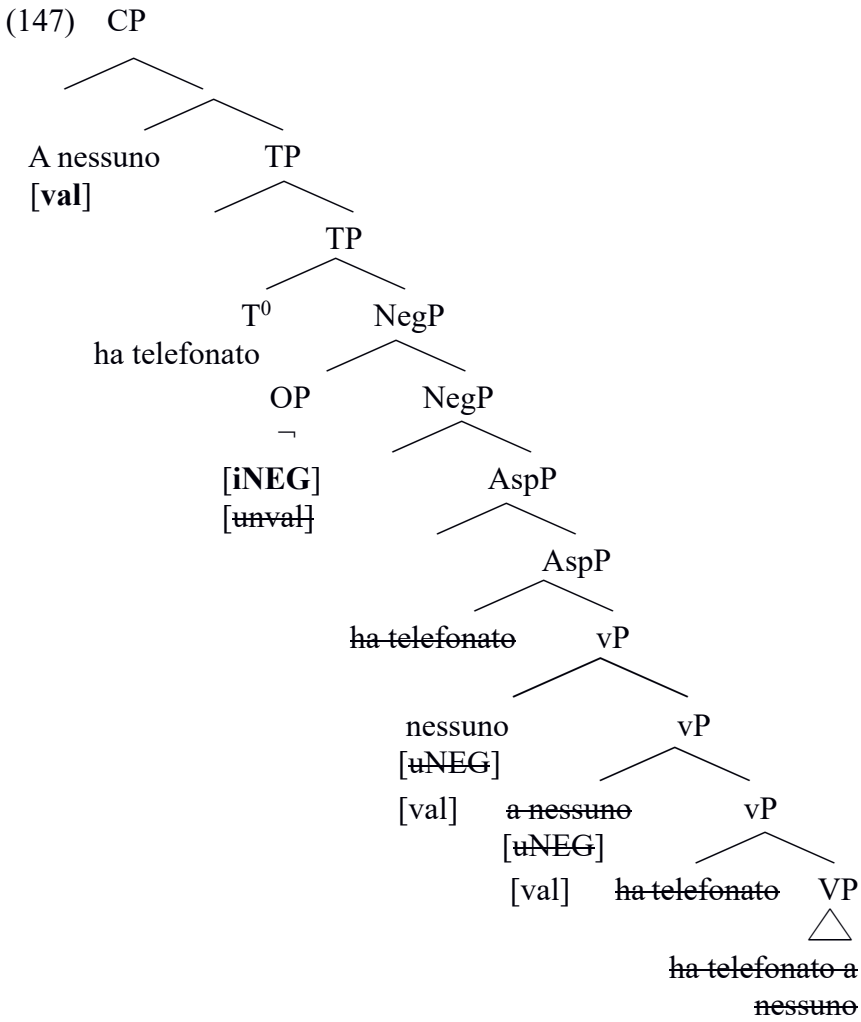
The fact that a complement can also check the [unval] features of the OP, as seen in (146), suggests that there is a requirement for the presence of an element with [val] above the NegP, and there is nothing specifically tied to the NM or the subject; what is relevant is the [val] feature these elements bear.

(146) A *nessuno* ha telefonato *nessuno*

I assume that unlike the subject in (145), the complement *a nessuno* in (146) moves to some peripheral position (Topic or Focus or Clitic Left Dislocated position), as demonstrated by the diagram in (147). Sentences like (146) are felt as more marked than the ones with a preverbal subject n-word, but for reasons that are not related to negation; rather markedness is due to the difference in

markedness between preverbal subjects vs. clitic left discolated objects in null-subject languages.

(147)



4.3.3 N-words in hybrid languages

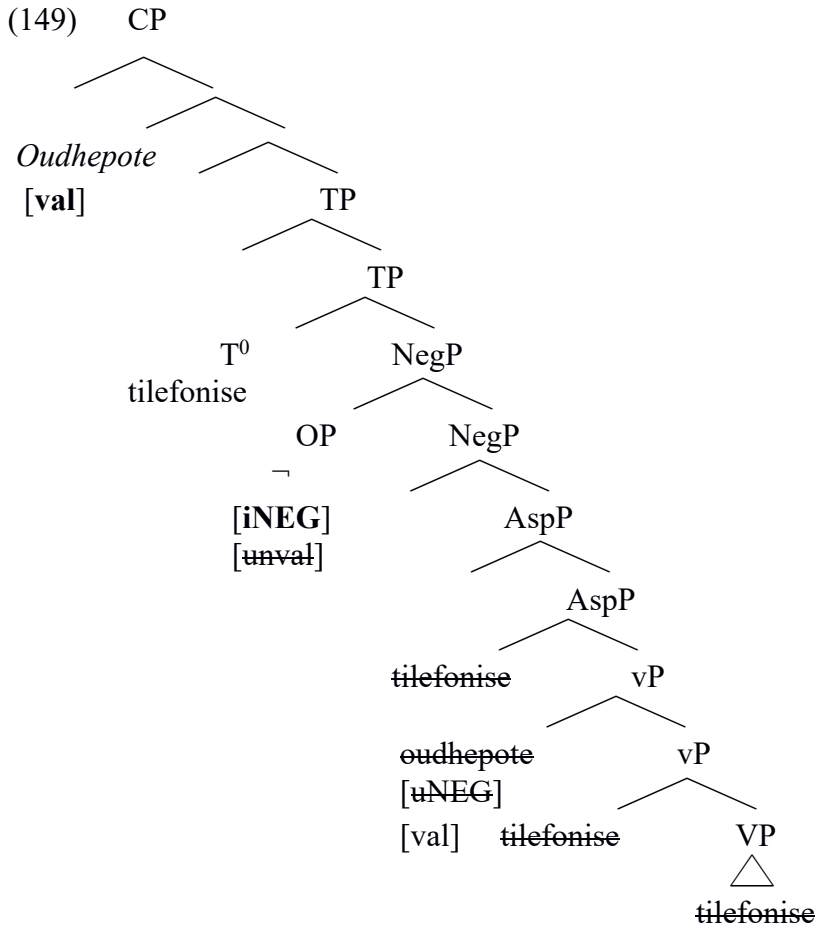
It has been argued that elements that show non-strict NC properties in strict NCLs are the ones that are morphologically marked with negation. Crucially, negation has to be morphologically transparent; speakers of strict NCLs should be able to recognise the n-word as being morphologically negative, otherwise this element cannot carry [val]. On the present view, the difference between strict and non-strict NCLs resides in the negative elements and not in the NMs. This allows for the possibility that there are also mixed languages, i.e. languages like Greek and Hungarian with one series of negative elements bearing [val] (and behaving like elements of non-strict NCLs) and another one bearing

[unval] (which require negative concord). In non-strict NCLs, n-words may have a morphological negative component such as Italian *nessuno* which carries morphological negation (*ne*= 'not') or *ninguèm* in Portuguese (from the latin word *nec* which means 'not'), but this is not always required. Speakers of non-strict NCLs learn that all n-words in their language bear [val]. On the other hand, in order for speakers of a generally strict NCL to know which elements bear [val], morphological transparent negation is a necessary requirement.

As far as Greek is concerned, expressions that can be used only in the context of negation and have an identifiable negative prefix such as *mi* and *ou* qualify as such 'negative'/[val] elements. On the other hand, non-negative elements used in non-negative contexts and bear prefixes such as *kan* (cf. (28)) are associated with focus— or question-marking. In hybrid languages like Greek, [val] n-words are expected to show similar properties to n-words of non-strict NCLs (i.e. *nessuno*-type expressions). This is the case with *ou*-elements in Greek. In (148a) and (148b), *oudhepote* has its [uNEG] checked by the OP in the specvP position. But if *oudhepote* remains in situ, as in (148a) then the [unval] of the OP remains unvalued and the derivation crashes. If *oudhepote* moves, as in (148b), then it values the [unval] on OP and the derivation converges, as shown in (149). This explains the contrast between (148a) and (148b):

(148) a. *Tilefonise *oudhepote*
called n-ever
b. *Oudhepote* tilefonise
n-ever called
'(S)he never called'

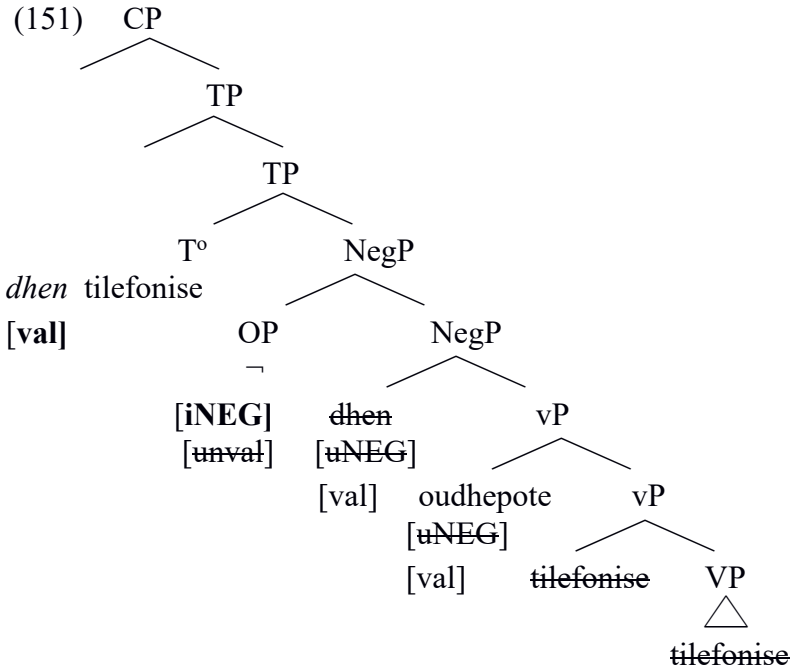
(149)



If an NM is present as in (150), then n-words with [val] do not move to the preverbal position for economy reasons. Both *oudhepote* and *dhen* have their [uNEG] features checked by OP in a configuration of Multiple Agree as shown in (151). The NM attaches to the verb on its way to T^0, and from that position the [unval] of the OP is valued. Movement of the n-word *oudhepote* is blocked by economy.

(150) **Dhen** tilefonise *oudhepote*
NM called n-ever
'(S)he never called'

(151)



Thus, the proposed analysis can account for the distribution of both groups of n-words, with strict and non-strict properties.

4.4 The (non-) ban of DN readings in a binary system

As already shown in 1.1.3, another property that distinguishes strict from non-strict NCLs is the availability of DN readings in the latter group, or what would be more accurate to say, the availability of verum focus readings (Höhle, 1992; Romero & Han, 2004) in non-strict NCLs. In the Italian example in (152), speaker' s B answer can be paraphrased along the lines ‘it is not the case that nobody called’, i.e. it can receive a verum focus interpretation in which speaker B rejects speaker's A assertion by negating it.

(152) A: *Nessuno* ha telefonato *Italian*
n-body has called
‘Nobody has called’
B: *NESSUNO non* ha telefonato
n-body NM has called
‘Nobody has not called’

Recall that the DN readings are typically available in non-strict NCLs in contexts involving the denial of a negative presupposition or assertion. In order for this type of DN reading to arise, the n-word needs to be stressed (Penka, 2011). In this special case a preverbal n-word and an NM can co-occur without rendering the sentence ungrammatical, giving rise to a DN reading.

The same holds in other non-strict NCLs such as Spanish (Herburger, 2001). Herburger reported that examples like (153) where two n-words co-occur in a single sentence, give rise to a DN reading, apart from a NC one. Note that this is a slightly different case from the one in (152), since example (153) receives either a NC or a DN reading. What is common in both (152) and (153) is that special intonation and a pragmatic context is required in order for the DN reading to become available.

(153) *Nadie nunca* volvió a Cuba *Spanish*
n-body n-ever returned to Cuba
'Nobody ever returned to Cuba' *NC reading*
'Nobody never returned to Cuba' *DN reading*

On the other hand, a DN interpretation is not available in strict NCLs or with elements with strict NC properties. The counterpart of example (152) in Greek with a 'regular' n-word provided in (154) does not give rise to a verum focus reading, even if the the NM or the n-word is phonologically accented. Speaker B's answer cannot convey a verum focus meaning with a 'regular' n-word and an NM.[81]

81 It has been reported in the literature that a DN reading is also available in strict NCLs when an NM co-occurs with two n-words, as in Romanian (Falaus, 2007a, 2007b) and Bulgarian (Corblin & Derzhansky, 1997).

Romanian
(i) *Nimeni* nu vine de *nicaieri*
n-body NM comes from n-where
'Nobody comes from anywhere'/'Nobody comes from nowhere'

The same has been reported for Greek (Giannakidou, 1997; Merchant, 2004). I leave these cases aside at least in Greek, as my consultants and I do not accept these cases of DN readings unless the NM *ohi* is inserted (cf. examples (155) and (156)).

(154) Speaker A: Kanis dhen tilefonise *Greek*
n-body NM called
'Nobody called'
B: *Kanis **DHEN** tilefonise
n-body NM called
'Nobody called/#Nobody has not called'
B′: ***KANIS** dhen tilefonise
n-body NM called
'Nobody called/#Nobody has not called'

Interestingly, this is not the case when two elements considered as *negative* co-occur in the structure. In example (155) two NMs, *ohi* and *dhen* co-occur in the structure which both bear a [val] feature in the proposed analysis.

(155) Speaker A: *Kanis* **dhen** tilefonise *Greek*
n-body NM called
'Nobody called'
Speaker B: **Ohi**, *kanis* **DHEN** tilefonise[82]
NM n-body NM called
'It is not the case that nobody called!'

The same holds in (156) in which there is an NM and an *ou*-element, hence two morphologically *negative* elements, two elements with [val] features in the current analysis. In both cases, (155) and (156), an unexpected DN reading

82 The DN reading conveyed by the co-occurrence of two NMs is not the only available reading in a strict NCL. As shown in (i), speakers' B answer may also receive a NC interpretation. Examples (i) and (155) differ not only with respect to their semantics, but also with respect to their prosody. A pause is required between *ohi* and the second CP in (i) marking distinct intonational phrases in order for the NC reading to be available (see the relevant spectrogram in Appendix II).

(i) A: Tilefonise kanis?
called n-one
'Has anyone called?'
B: Ohi. *Kanis* dhen tilefonise
NM n-body NM called
'No. Nobody has called'

becomes available, as opposed to (154) in which there was only one element with [val], the NM.[83]

(156) Speaker A: *Oudhepote* tilefonise *Greek*
n-ever called
'(S)he never called'
Speaker B: **Ohi**, *OUDHEpote* tilefonise
NM n-ever called
'It is not the case that (s)he never called'

Biberauer and Zeijlstra (2012), following Zeijlstra (2004), discuss the DN/verum focus readings arising in another strict NCL, Afrikaans. They argue that focus creates a distinct Focus phrase which is opaque, not accessible to any checking relations. Prosodic marking reflects the presence of an additional NegP this being the reason why the n-word or the NM must bear accent in order for the clause to be licit (recall that without prosodic stress example (152) is ungrammatical). As a result, two semantic negations have to be assumed one associated with the semantic negative OP bearing [iNEG] which is triggered by the n-word *nessuno* and the other one introduced by the NM *non* which bears [iNEG], as illustrated in (157).

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83 Notice though that in both cases, in (155) and (156), the NM *ohi* is introduced. *Ohi* cannot occur as an NM in a sentence, as shown in (i), but it can stand on its own as a fragment answer contrary to NMs *dhen* and *min,* illustrated in (ii). For this reason, I assume that *ohi* bears [uNEG:val], similarly to NMs *dhen* and *min.* Note that another option would be to assume that *ohi* bears [iNEG:val]. I will adopt the former view though as all NMs in my analysis bear [uNEG, iMORPH]. However, it could be well the case that *ohi* treats differently and bears [iNEG:val].

(i) a. I Anna dhen/*ohi tilefonise
the Anna NM/NM called
'Anna did not call'
b. Na min/*ohi tilefonisi i Anna
PRT NM/NM call the Anna
'Anna should not call!'
(ii) Speaker A: Tilefonise *kanis*?
called n-one
'Has anyone called?'
Speaker B: Ohi/*Dhen/*Min
'No'

(157) [$_{FocP}$[**$_{NegP1}$**OP**$_{[iNEG]}$** NESSUNO**$_{[uNEG]}$**]][**$_{NegP2}$** **non**$_{[iNEG]}$** ha telefonato]

However, complications arise for this analysis when we turn to strict NCLs, which ban DN/verum focus readings, or to hybrid languages which ban DN readings with certain elements, but not with others. If an n-word sufficed to trigger the presence of a covert operator and focus disrupted Agree relations there is no reason why the structure in (158), which is the counterpart of (157), would be banned. Thus, the ungrammaticality of (158) in not predicted under Biberauer and Zeijlstra's analysis.

Greek

(158) *[**$_{NegP1}$**OP**$_{[iNEG]}$**]Kanis**$_{[uNEG]}$**][$_{FocP}$**[**$_{NegP2}$**OP**$_{[iNEG]}$**]**
DHEN$_{[uNEG]}$** tilefonise]]

In the following lines, I will show that a binary system not only can account for the availability of verum focus readings in non-strict NCLs, but it can also explain the ban on elements with strict NC properties. Following Biberauer & Zeijlstra (2012), I assume that the prosodic marking reflects the presence of a Focus phrase which is opaque, not available for any checking relations. In a verum focus reading, an element must bear accent in order for the clause to be licit. In (159), it is the n-word *nessuno*. Since in my analysis both elements, the n-word *nessuno* and the NM *non* bear [uNEG], two semantic negative operators are licensed by the structure to check the [uNEG] features in the two distinct phrases. The [unval] features of the OPs are valued by *nessuno* and *non* which bear [val] respectively.

(159) [$_{FocP}$[**$_{NegP1}$**OP$_{1[iNEG,:\sout{unval}]}$NESSUNO$_{[\sout{uNEG}:val]}$]][**$_{NegP2}$**
OP$_{2[iNEG,:\sout{unval})}$ **non**$_{[\sout{uNEG}, val]}$ ha telefonato]]

As pointed out above, this is never the case with elements with non-strict properties, even if the NM or the n-word is phonologically stressed, repeated for convenience from above in (160).

(160) Speaker A: Kanis dhen tilefonise *Greek*
n-body NM called
'Nobody called'
Speaker B: *Kanis **DHEN** tilefonise
n-body NM called
'Nobody called/#Nobody has not called'

The proposed symmetric system can capture the ban of DN readings with these elements; due to the assumption that the difference between strict and non-strict NCLs resides in n-words, the ungrammaticality of (160) receives a straightforward explanation. N-words with strict NC properties bear [unval]. Hence in the absence of a second element with [val] the [unval] features of the OP_1 and of the n-word *kanis* remain unvalued in (161) (vs. (159)), since Focus creates an opaque phase. As a result, a second operator is not tolerated and a DN reading is not expected to be available in structures like (160) in which an NM and an n-word with strict NC properties co-occur.

(161) *[$_{NegP1}$**OP$_1$**$_{[iNEG:\textbf{unval}]}$Kanis$_{[uNEG:\textbf{unval}]}$][$_{FocP}$[$_{NegP2}$
OP$_2$ $_{[iNEG:unval]}$ dhen$_{[uNEG:val]}$ tilefonise]]

A welcome result of the present analysis is that it does not exclude a priori DN readings in strict NCLs. Actually, it predicts that if two elements with [val] are present, then a DN reading should be available even in strict NCLs. This is empirically verified. Examples (155) and (156) contain the NM *ohi* bearing [uNEG:val] and another element with [val], either an NM in (155) or an *ou*-element in (156). Since two elements with [val] co-occur in the structure, the presence of two semantic operators is correctly predicted to be legitimized, as

illustrated in (162) and (163) for (155) and (156) respectively:[84]

(162) [**OP1**[iNEG:unval]**ohi**[uNEG:**val**]][FocPkanis[uNEG:unval]
OP2[iNEG:unval] **dhen**[uNEG: **val**] tilefonise]

(163) [**OP1**[iNEG:**unval**]**ohi**[uNEG:**val**]][FocP**ou**dhepote[uNEG:**val**]
OP2[iNEG:unval] tilefonise]

4.5 Conclusions

Drawing from findings in Greek and Hungarian, I have argued in this chapter that the cross-linguistic distribution of NC is more complex than standardly assumed, and that the taxonomy consists of strict NCLs, non-strict NCLs and hybrid languages. In order to capture the facts, I proposed a theory of NC that is based on the idea of Zeijlstra (2004) that NC is syntactic Agreement, but also deviates from Zeijlstra in several respects:

(a) The system of feature checking is binary. Both the probe and the goal need to satisfy a [uF] or [unval] feature in negative dependencies. This assumption is necessary in order to prevent overgeneration of NMs, to account for the absence of the NM with preverbal *negative* elements (i.e *ou*-elements) and to explain the obligatory presence of an NM with 'regular' n-words in hybrid languages, such as Greek or Hungarian.

(b) NCLs split into two groups (strict and non-strict ones) depending on a syntactic formal feature. N-words with strict negative properties carry an [unval] feature, while elements with non-strict negative properties carry a [val] feature. Elements with transparent *negative* morphology are possible candidates for [val] specification in hybrid NCLs.

(c) There is no sharp distinction between n-words and NMs (just as there is no sharp distinction between strict and non-strict NCLs), since either category

84 No pause is permitted between *ohi* and the rest of the sentence in order for the DN reading to arise (cf. footnote 82).

carries [uNEG]. In addition, both categories may bear a [val] or [unval][85] feature. There is no a priori limitation on which elements (NMs and/or n-words) with [val] or [unval] features a language may contain, hence hybrid languages are predicted.

(d) As stated above, NMs in strict and non-strict NCLs have the same semantic status, bearing [uNEG]. The crucial difference between strict and non-strict NC configurations does not derive from properties of the NMs but from the different value of a formal syntactic feature on n-words. N-words with non-strict NC properties bear [val], while n-words with strict NC properties are specified [unval].

85 Till now, we have not seen NMs carrying [uNEG:unval], but the analysis does not a priori exclude them. As we will see in the next chapter, such NMs are encountered in Afrikaans and French.

Chapter 5

Extensions of the binary system

In this chapter I extend the proposed theory to cases in which there is speaker variation regarding the distribution of n-words. I first deal with the Greek particle *oute* and explore how the proposed analysis can account for its distribution and interpretation (*oute*$_1$ and *oute*$_2$) in two varieties of Greek (sections 5.1-5.2). I then turn to other languages exhibiting speaker variation with respect to the distribution of n-words, namely Afrikaans (5.3) and French (5.4). I investigate how these fit into the system, highlighting the advantages of the proposed analysis to account for speaker variation. Then, I extend the proposed analysis to a relevant phenomenon not discussed so far, notably NC of NMs in Greek dialects (5.5).

5.1 An analysis for *oute*$_1$ ('neither/nor') in a binary system

In this section, I outline how my proposal can deal with speaker variation regarding DP modification with *oute*$_1$ and *oute*$_2$ in preverbal position, as well as with speaker invariant properties of *oute*$_1$ and *oute*$_2$ in VP-modification.[86]

Let me remind the reader that *oute*$_1$ receives the interpretation of 'neither/nor', while *oute*$_2$ has a meaning corresponding to 'even'. Starting with *oute*$_1$ ('neither/nor'), recall that speakers of variety A exclude the NM both in contexts of VP modification (164) and where *oute*$_1$ serves as a DP modifier (165).

Variety A

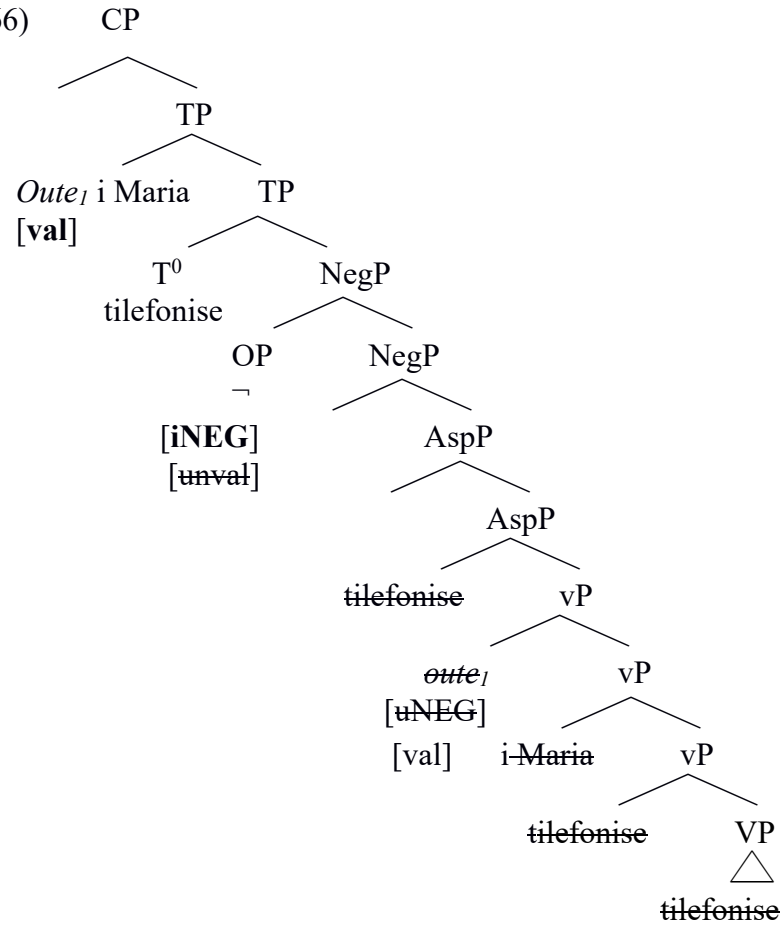
(164) *Oute*$_1$ **(*dhen)** tilefonise — *VP modification*
oute NM called
'Neither did (s)he call'

[86] In the previous chapter I dealt with cases in which there was no speaker variation, namely when the associate of an *ou*-element was the predicate/VP.

(165) *Oute$_1$* i Maria **(*dhen)** tilefonise *DP modification*
oute the Maria NM called
'Neither did Maria call'

Since *oute$_1$* is an *ou*-element, it is expected to show properties similar to the ones displayed by other elements of the *ou*-class, it must be carrying [uNEG:val]. What this means is that it should exclude the NM when it occurs preverbally, but it must require an NM when *oute$_1$* occurs in a postverbal position. This expectation is fulfilled with speakers of variety A, as seen in examples (164) and (165). The derivation of sentence (165), illustrated in (166) for convenience, is similar to the derivation with preverbal *nessuno* (145) and *oudhepote* (149) illustrated in the previous chapter. More precisely, the *ou*-element, as seen in (166), first checks its [uNEG] feature in its initial position postverbally. Since *oute$_1$* bears [val], it moves to a preverbal TP position where it values the [unval] features of the OP, or else the derivation would crash:

(166)



Let us turn now to variety B. Speakers of variety B, like speakers of variety A, exclude the NM in VP-modification, as seen in (167) (cf. (164). However, they seem to be flexible as far as DP-modification is concerned in that the NM is optional (168):[87]

Variety B

(167) *Oute*$_1$ (***dhen**) tilefonise *VP modification*
oute NM called
'Neither did (s)he call'

[87] Needless to say, that *oute*$_1$ always requires the NM in postverbal position:

(i) *(Dhen) tilefonise *oute*$_1$ i Maria
NM called oute the Maria
'Neither did Maria call'

(168) *Oute$_{I}$* i Maria (**dhen**) tilefonise *DP modification*
oute the Maria NM called
'Neither did Mary call'

In the current system, this means that speakers of variety B are flexible regarding the value of the formal feature of *oute$_{I}$*. They allow both [val] and [unval] as possible values for *oute$_{I}$*, i.e. they essentially treat [val] as underspecified for negative features. Note, though, that there is register variation concerning the two options in that the sentence without the NM feels more formal than the one with the NM for speakers of variety B. For example, the version without the NM belongs to the written register, while the version with the NM would be used in their everyday speech. This seems to reflect a transitional stage in their grammar. On the one hand, speakers of variety B recognise *ou*-elements as 'negative' and therefore assign *oute$_{I}$* a [val] feature. On the other hand, their grammar is in the process of becoming strict, in the sense that they start treating *ou*-elements as being non-negative morphologically. On this interpretation, speakers also allow the unvalued formal feature, generalizing the pattern from 'regular' non-negative n-words to *oute$_{I}$*. The reason why there is a group of speakers which licenses the construction in (168) with an overt NM co-occurring with preverbal *oute* is probably related to the Jespersen cycle (1917) (cf. section 2.5). Descriptively speaking, the negative meaning of the negative particle *oute$_{I}$* has been 'weakened' in the grammar of speakers of variety B, and the NM is allowed as a means to reinforce negation. In other words, there is evidence that *oute$_{I}$* starts behaving similarly to 'regular' n-words in the grammar of speakers of Variety B in Greek. Note that a theory that attributes the difference between strict and non-strict NC to a formal feature on negative expressions can more easily account for this type of optionality than a theory which attributes the relevant free variation to the different status of NMs.

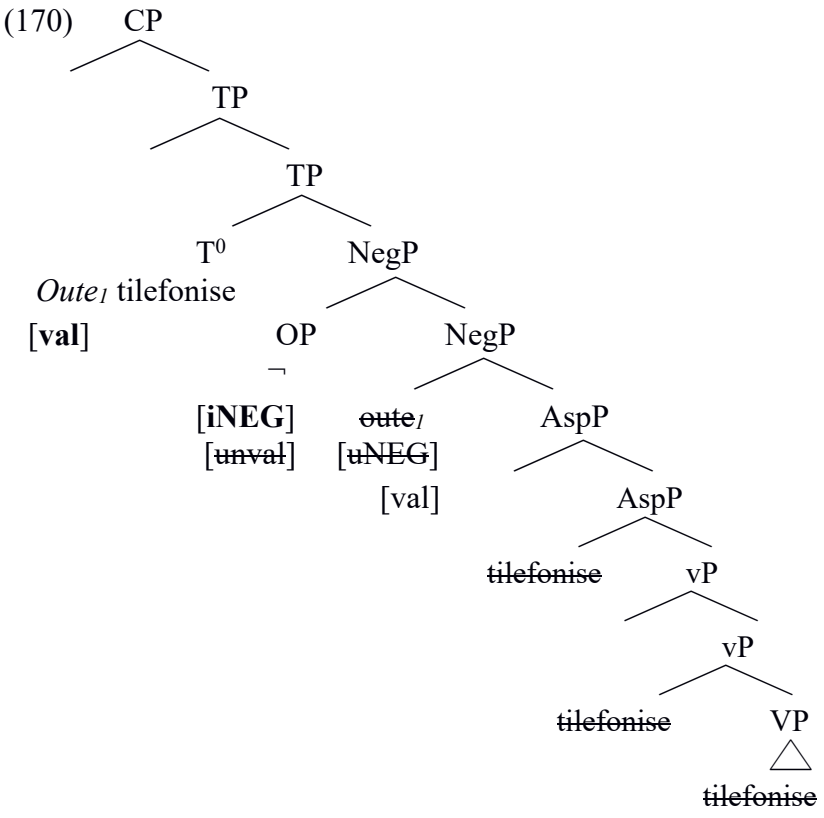
5.1.1 Oute$_1$ and predicate modification

Interestingly, speakers of both varieties exclude the NM in cases of predicate modification, i.e. when the particle *oute$_1$* appears adjacent to the verb, as in (169) repeated from above.

(169) *Oute$_1$* (***dhen**) tilefonise *Variety A/B*
oute NM called
'Neither did (s)he call'

I take this as evidence that this type of *oute$_1$* occupies a Neg^0 position, accounting for the observation that Neg^0 is unavailable for an NM even for speakers of variety B. Since this type of *oute$_1$* is a Neg-head it bears a valued feature and thus is the only element that can possibly value the [unval] of the OP. Just like *dhen* and *min*, *oute$_1$* has its [uNEG] feature checked in its base position and combines with the verb when it moves to T^0, as illustrated in (170). From the T^0 position, it values the [unval] feature of the OP.

(170)



Support for this analysis is drawn from the observation that a sentence in which an NM and *oute₁* co-occur, as shown in (171), is completely ungrammatical.[88]

(171) **Oute₁* **dhen** tilefonise
oute NM called
'Neither did (s)he call'

Summarizing, I have shown that the proposed binary system can properly account for the distribution of *oute₁*. Regarding speaker variation concerning DP modification constructions, I have claimed that speakers of variety B may switch the value of the formal feature of *oute₁* into an [unval], treating *oute₁* as a 'regular' n-word depending on the register they employ. This is viewed as evidence that the language is in a transitional stage before turning into a 'regular' strict NCL.

5.2 An analysis for *oute₂* ('even') in a binary system

Recall that the homophonous particle *oute₂* exhibits speaker variation as well. Speakers of variety A, which exclude the NM in DP modification with *oute₁* (see (165) above), require it with *oute₂*, as shown in (172):

(172) <*Oute₂* (*kan*)[89] i Maria> *(**dhen**) tilefonise *Variety A*
oute kan the Maria NM called
'Even Maria didn't call'

The obligatory presence of the NM with preverbal *oute₂* modifying a DP seems, at first, unexpected under the hypothesis that preverbal elements with

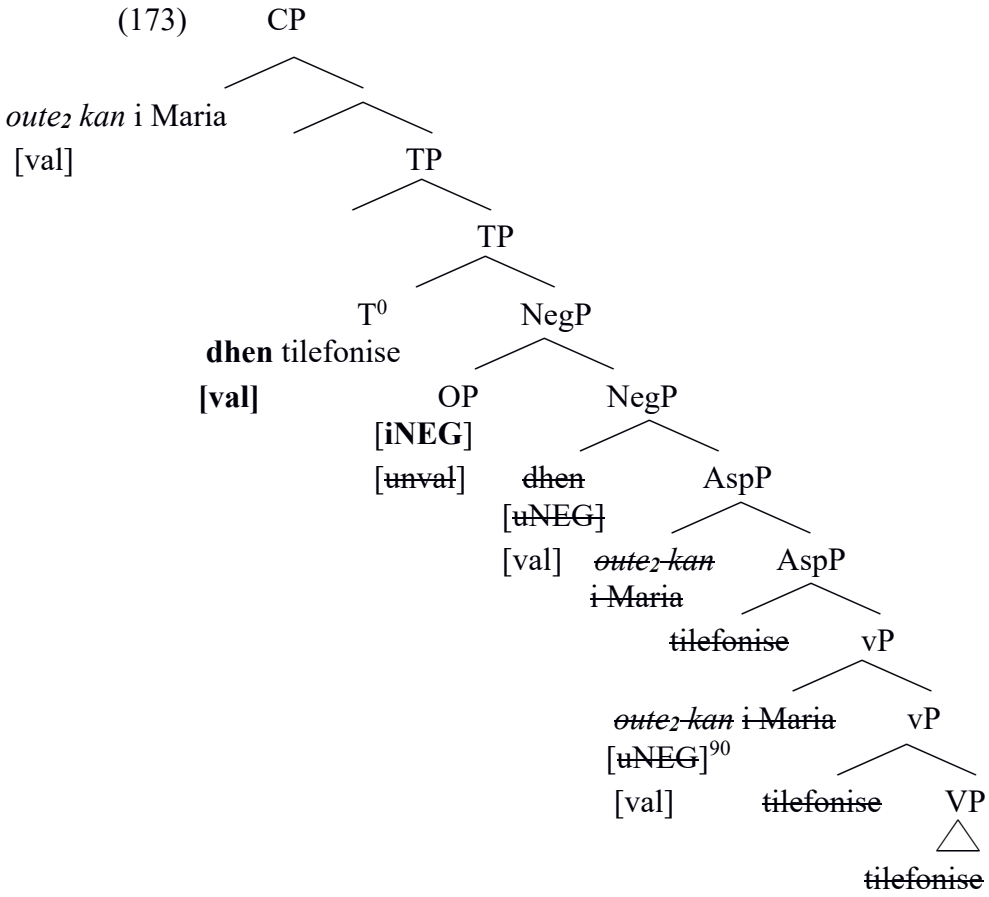
[88] The construction with post verbal *oute₁* is also ungrammatical even when an NM is present as in (i), since *oute₁* needs to immediately precede the element it modifies:

(i) *Dhen tilefonise *oute₁*
NM called oute
'Neither did (s)he call'

[89] *Oute₂* may be followed by the particle *kan*, which enforces its meaning (Giannakidou, 1998, 2005). For more on *kan* see also 6.3.

morphological negation bear a [val] feature. However, I would like to propose that the reason why an element with a [val] feature such as *oute₂* always appears with an NM in constructions like (172) for speakers of variety A is related to an independent factor. More specifically, I would like to suggest that *oute₂* has moved to a preverbal position *after* normal feature valuation has taken place. This means that an NM is needed in order to value the [unval] on the OP in the canonical fashion and in fact there is evidence that *oute₂* is located in SpecCP where it has moved for independent reasons having to do with focus. *Oute₂* undergoes focus-movement directly from the post verbal position without passing from the preverbal position targeted by negative elements, and hence the presence of the NM is obligatory. This is illustrated in (173).

(173)



90 Feature checking of *oute₂* takes place either in the base position of *oute₂* or at SpecAspP.

Empirical support for the claim that *oute₂* targets a high position is provided by the observation that it appears to the left of C^0 in constructions involving overt complementizers. As shown in (174), *oute₂* precedes the complementizer *pu*.

(174) *Oute₂* (pu) tilefonise
oute that called
'(S)he didn't even call'

By contrast, the version of (174) with *oute₁* is strictly ungrammatical, as shown in (175), indicating that *oute₁* cannot target this very high position:

(175) **Oute₁* (pu) tilefonise
oute that called
'#Neither did (s)he call'

Returning to *oute₂*, from the high specCP position *oute₂* can no longer affect the evaluation process, either because it reaches this position too late, after feature valuation in the IP domain has taken place, or because it is too high and can no longer value the [unval] feature of the OP.

Speakers of variety B show the same flexibility with *oute₂* as they do with *oute₁*, regarding the presence of an NM. Specifically, they license preverbal *oute₂* with or without the NM in preverbal position, although the version without the NM is dispreferred, as repeated in (176).

(176) *Oute₂ kan* i Maria (dhen) irthe *Variety B*
oute kan the Maria NM came
'Even Maria didn't come'

Sentences such as (176) have led researchers to assume that the NM with *oute₂* is optional (Giannakidou, 2007), but I have found that this is not the characteristic property of Greek n-words in all grammars. Optionality of NMs is only found with speakers of variety B, and it is restricted to this particular

construction with *oute₂*, namely DP modification (and crucially not VP modification). Moreover, constructions lacking an NM with preverbal *oute₂* as a DP modifier are acceptable as long as certain prosodic restrictions are fulfilled (see also 2.3.2 above for discussion).[91] Speakers of variety B license the construction without the NM, as long as *oute₂* and its associate appear prosodically close to the verb. Example (177) which contains a heavy DP is ungrammatical without an NM even for speakers of variety B:

(177) *Oute₂ kan* o aderfos tis filis mu *(**dhen**) irthe
oute kan the brother the friend mine NM came
'Even the brother of my friend didn't come'

The contrast between (176) and (177) indicates that *oute₂* can value the [unval] features of the OP (for speakers of variety B), as long as the DP appears close to the verb, forming something like a single intonational phrase.[92] On the other hand, the length of the DP in constructions like (177) enforces a prosodic break between the DP and the rest of the sentence, and in this situation the NM is obligatory (see also the spectrograms in Appendix II). This evidence suggests that feature valuation takes place at Spell Out (cf. PF merger of Marantz (1988) and Bobaljik (1995)).

5.2.1 Oute₂ and predicate modification

Example (178) demonstrates that speakers of both varieties exclude the NM with *oute₂* in VP modification, just as with *oute₁*. One possibility would be to analyse this instance of *oute₂* as a head, similarly to what I have proposed for *oute₁*.

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91 Giannakidou (2007) does not make a distinction regarding the type of verb that licenses the construction without the NM. Her example includes a transitive verb, but my consultants found (i) marginal without the NM:

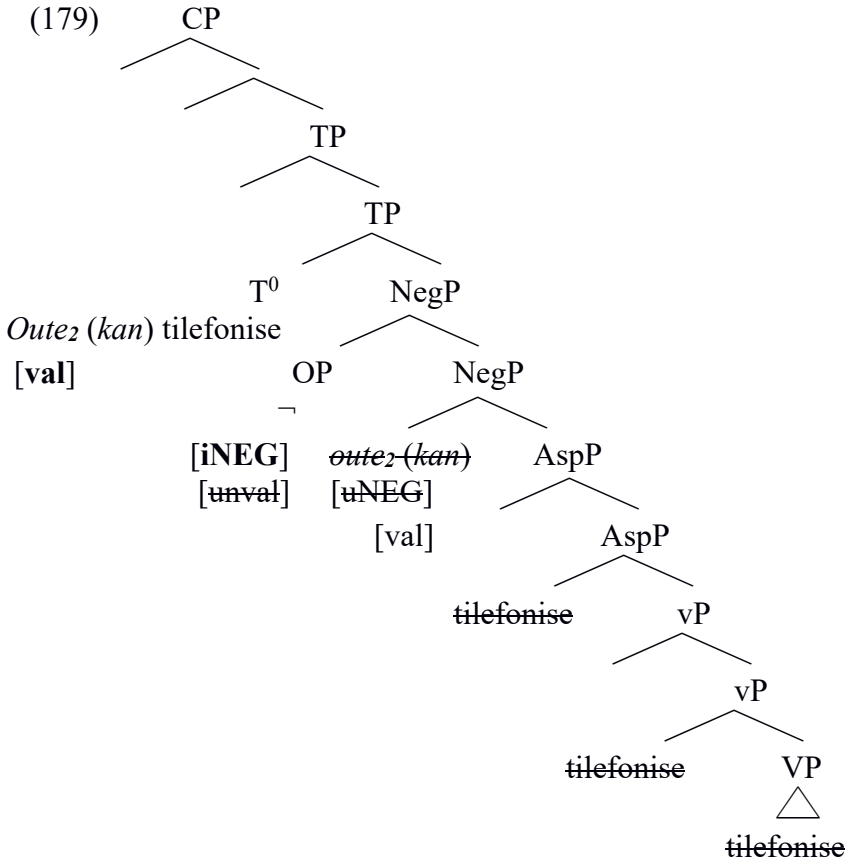
(i) *Oute kan* ti Maria (dhen) proskalese o pritanis
oute kan the Maria NM invited the dean
'Not even Maria did the dean invite'

92 Many thanks to Caroline Féry for discussion on the prosody of these elements.

(178) *Oute₂* (kan) (*NM) tilefonise *Variety A/B*
oute kan NM called
'(S)he didn't even call'/'#Neither did (s)he call'

Based on the findings from speakers of variety B regarding the relation between DP-heaviness and the availability of Agree, exclusion of the NM with *oute₂* is predicted to occur in verb modification. Since *oute₂* occupies the Neg^0 position, the NM is always predicted to be excluded in verb modification, as depicted in (179):

(179)



This analysis faces problems, though, in view of the fact that *oute₂* can occur in a high specifier-like position above complementizers, as was shown in (174), repeated below.

(180) *Oute₂* (pu) tilefonise
oute that called
'(S)he didn't even call'

Oute₂ cannot be easily analysed as a head since it appears in what looks like a phrasal position, unless we assume a more layered complementizer domain along the lines of cartographic analyses of the CP domain, (i.e. Cinque & Rizzi, 2008) and take *oute₂* as heading a high complementizer position preceding 'pu'. I will have to leave a more complete discussion of these puzzling facts for another occasion.

5.3 Negation in Afrikaans

5.3.1 Afrikaans in a unary system

Apart from Greek, there are other NCLs that show speaker variation regarding negation. The first language I will discuss here is Afrikaans. Afrikaans shares many common properties with Dutch, but differs from it quite substantially. To begin with, Afrikaans has two NMs, one preverbal and one clause final, to be referred to as *nie₁* and *nie₂* respectively. Moreover, Afrikaans has been analysed as a strict NCL (den Besten, 1986; Robbers, 1992; Oosthuizen, 1998; Biberauer, 2008a, 2008b, 2009 among others), as *nie₂* needs to be present in order for a negative meaning to arise, as seen in (181).

(181) Hy is *(**nie₁**) moeg *(**nie₂**)[93]
he is NM tired NM
'He is not tired'

As opposed to *nie₂*, *nie₁* is not a necessary condition for the sentence to receive a negative interpretation. An n-word, such as *niemand* in (182) can also give rise to a negative meaning when co-occuring with *nie₂*:[94]

[93] All examples are adopted from Biberauer & Zeijlstra (2012a, 2012b.)
[94] Notice that *nie* is optional after an n-word in fragment answers (Biberauer & Zeijlstra, 2012b):

(i) Wie het my boek gesien? Niemand (*nie*)

(182) Hier slaap *niemand* ***(nie$_2$)**
here sleeps n-body NM
'Nobody sleeps here'

When an n-word co-occurs with *nie$_1$* and *nie$_2$* as in (183), all speakers of Afrikaans obligatorily assign the sentence a DN reading.

(183) *Niemand* het **nie$_1$** die werk voltooi **nie$_2$**
n-body have NM the work completed NM
DN: 'Nobody hasn't completed the work' *Variety A/B*
*NC: 'Nobody completed the work'

What makes Afrikaans particularly interesting for the theory of NC, especially from the present perspective, is that speakers of Afrikaans fall into two groups regarding the interpretation of *multiple* n-words. As Biberauer & Zeijlstra, henceforth B&Z (2012a, 2012b), observe, speakers of variety A license a DN reading only if there are multiple n-words, as *niemand* and *niks* in (184), similarly to the sentence in (183). However, somewhat unexpectedly, speakers of variety B additionally admit a NC reading.[95]

(184) *Niemand* het *niks* gesien **nie$_2$**
n-body have n-thing seen NM
DN: 'Nobody saw nothing' *Variety A/B*
NC: 'Nobody saw anything' *Variety B*

According to B&Z (2012b), variety A differs from variety B in that n-words bear [iNEG] features, similarly to Double Negation (DN) languages. The motivation for the proposal that n-words carry [iNEG] is drawn from the fact that speakers of variety A obligatorily have a DN reading when more than one

who has my book seen N-body NM
'Who has seen my book?' 'Nobody'

95 Variety B also shows a freer distribution of the marker *nie*, i.e. as an emphatic particle, while variety A only licenses *nie* at the end of the sentence (see B&Z, 2012a).

n-word is present in a sentence like (184), blocking the NC reading. If each n-word carries [iNEG], then two n-words introduce two separate semantic negations resulting in a DN reading:

(185) *Niemand*$_{[iNEG]}$ het *niks*$_{[iNEG]}$ gesien **nie$_2$**$_{[uNEG]}$ *Variety A*
n-body have n-thing seen NM
'Nobody saw nothing'

This means that variety A establishes an Agree relation between an n-word and the final *nie$_2$*, as illustrated in (186).

(186) Hier slaap *niemand*$_{[iNEG]}$ **nie$_2$** $_{[uNEG]}$ *Variety A*
here sleeps n-body NM
'Nobody sleeps here'

Therefore, B&Z assume that speakers of variety B assign to n-words [uNEG], which means that variety B is considered to be a typical strict NCL. Since n-words bear [uNEG], they trigger the presence of the covert operator, as shown in (187).

(187) [OP¬$_{[iNEG]}$Hier slaap *niemand*$_{[uNEG]}$ **nie**$_2$ $_{[uNEG]}$] *Variety B*
here sleeps n-body NM
'Nobody sleeps here'

The NC reading arises as expected with multiple n-words, because the covert operator multiply checks the [uNEG] features of n-words and of the NM, illustrated in (188):

(188) **[**OP¬$_{[iNEG]}$ *Niemand*$_{[uNEG]}$ gee my niks$_{[uNEG]}$ **nie**$_2$ $_{[uNEG]}$**]**
n-body give me n-thing NM
'Nobody gives me anything'

What remains to be answered is how the unexpected DN reading arises in a strict NCL, such as variety B. B&Z's answer is that this is due to focus. They observe that in order for the DN reading to emerge, one of the negative elements has to bear focal stress in (189a). If none of the n-words bears phonological stress, then the DN reading is unavailable, as shown in (189b), and only a NC reading arises.

(189) a. *Niemand* gee my *NIKS* **nie$_2$** *Variety B*
n-body gives me n-thing NM
'Nobody gives me nothing'
b. Niemand gee my niks **nie$_2$**
'#Nobody gives me nothing'/'Nobody gives me anything'

Phonological stress is taken to indicate the projection of a designated focus phrase (FocP). In turn, focus is considered to disrupt Agree relations, and, as a result, an additional OP has to be introduced, to check the [uNEG] features of the n-word inside FocP, illustrated in (190). Since two semantic operators are present, the DN reading is available.[96]

(190) **[**$_{\text{NegP1}}$**OP**$^{\neg}$$_{\text{[iNEG]}}$ *Niemand*$_{\text{[uNEG]}}$ gee my
[$_{\textbf{FocP}}$**[**$_{\text{NegP2}}$**OP**$^{\neg}$$_{\text{[iNEG]}}$*NIKS*$_{\text{[uNEG]}}$**]** **nie**$_{2\ \text{[uNEG]}}$**]**
n-body give me n-thing NM
'Nobody gives me nothing'

In Table 5, it is shown how the two varieties fit the typology of NC and DN languages in Zeijlstra's system, adopted by B&Z (2012b). Notice that variety A of Afrikaans is considered to be special in that it is the only studied language that shares the [iNEG] status of n-words with DN languages, and the [uNEG] status of NMs with strict NCLs.

96 The analysis entails that special phonological stress forces the DN reading and bans the NC one.

Table 5. They typology of n-words and NMs in B&Z (2012b)

	N-words [iNEG]	**N-words [uNEG]**
NMs [iNEG]	DN languages: *Dutch, German, Swedish*	Non-strict NC languages: *Spanish, Italian, Portuguese*
NMs [uNEG]	*Afrikaans Variety A*	Strict NC languages: *Czech, Serbo-Croatian, Greek, Afrikaans Variety B*

5.3.2 Afrikaans in a binary system

In this section, I will explore how Afrikaans can be accommodated in the alternative typology based on binary checking. In the preceding sections, I have proposed that NMs carry [uNEG:val] in both strict and non-strict NCLs and that n-words with non-strict NC properties differ from n-words of strict NCLs in that n-words of the former group of languages carry a formal [val] feature. Semantic negation is always introduced by a covert operator in SpecNegP. As will be seen, Afrikaans naturally falls out from this proposal, with the exception that it has an additional NM bearing [uNEG:unval]. This feature is predicted by our typology, but it has not been seen at work so far in the above examined languages. In the next sections, I will present in detail arguments for this analysis.

5.3.2.1 Distinguishing NMs in Afrikaans

Following Biberauer (2009) who is based on Oosthuizen (1998), I will distinguish *nie*$_1$ from *nie*$_2$ based on their different properties regarding omissibility, modifiability, substitution and stressability.

(i) *omissibility*: as shown in (191) *nie*$_1$ can never be omitted. On the other hand, *nie*$_2$ may be omitted without affecting the meaning, as seen in (192). This kind of omission mainly occurs in every day speech.

Examples from Biberauer (2015)

(191) Hy maak *(**nie**1) klaar **nie**2
he make NM finished NM
'He isn't finishing up'

(192) Hy maak **nie**1 klaar (**nie**2)
he make NM finished NM
'He isn't finishing up'

(ii) *modifiability:* the NM *nie1* can be strengthened or weakened via adverbial modification (193). This is not an option for *nie2* as seen in (194):

(193) Jy let glad/absoluut/miskien/moontlik **nie**1 op **nie**2
you attend altogether/absolutely/maybe/possibly NM
op **nie**2
on NM
'You aren't remotely paying attention.'

(194) *Jy let **nie**1 op glad/absoluut/miskien/moontlik **nie**2

(iii) *substitution*: NMs also show different properties with respect to substitution by a stronger negative form. The NM *nie1* can be replaced by an alternative negative element in order to give rise to a stronger negative meaning (196). However, this is not an option for *nie2* as seen in (197):

(195) Ons is *nie1* ryk *nie2.*
us is NM rich NM
'We are not rich'

(196) Ons is *geensins* ryk **nie2** (**nie1** replaced by *geensins*)
us is not-remotely rich NM
'We are not remotely rich'

(197) *Ons is **nie1** *ryk geensins* (**nie2** *r*eplaced by *geensins*)

(iv) *stressability*: *nie1* can be stressed. When stressed, then the negative meaning is 'reinforced', as seen in (198). On the other hand *nie2* cannot be stressed[97], as illustrated in (199):

(198) Ek weet **NIE1** wat sy bedoel **nie2**
I know not what she mean NM
'I DON'T know what she means'

(199) *Ek weet **nie1** wat sy bedoel **NIE2**
'#I DON'T know what she means'

In addition, *nie2* can optionally appear in non-negative environments, as in (200), an example from Biberauer (2015):

(200) Hy kon nouliks staan (**nie2**)
he could barely stand NM
'He could barely stand'

In sum, *nie***1** can participate in different types of structures, such as omission-modifiability- substitution, it can be stressed, while this is never an option for *nie***2**. Based on the above-mentioned properties, I adopt the assumption that *nie1* is treated differently from *nie2* and that the meaning of *nie2* is 'weakened', following Biberauer (2015), as reflected by the fact that it can also appear in non-negative sentences and cannot be modified, substituted or stressed.

97 As Biberauer (2015) mentions, *nie2* may be stressed in contexts which are metalinguistic. See footnote 6 in the aforementioned paper.

5.3.2.2 An analysis for Afrikaans

For the current system, this entails that *nie$_1$*[98] is an NM, similar to the rest NMs that we have seen in NCLs; it bears [uNEG:val], given that its presence triggers a negative interpretation. On the other hand, *nie$_2$* bears [uNEG:unval] since crucially it cannot license a negative interpretation in the absence of *nie$_1$* or a negative word. Regarding n-words in Afrikaans, I propose that they are specified as [val] in both varieties, similarly to *nie$_1$*. Motivation for the [val] feature of n-words comes from the observation that in both varieties one negative n-word suffices to negate a sentence, as repeated in (201). Recall that a covert OP is licensed as long as one element with a [val] feature is present. Since *nie$_2$* bears [unval], the only element that can license the OP is the n-word *niemand* in (201).

(201) Hier slaap *niemand* **nie$_2$** *Variety A/B*
here sleeps n-body NM
'Nobody sleeps here'

Hence, in the proposed analysis NMs in Afrikaans bear the feature values given in table 6. Notice that there is no featural distinction between the two varieties, unlike what has been proposed by B&Z (ibid.).

Table 6. *Afrikaans in a binary system*

Afrikaans	***features***
nie$_1$	[uNEG:val]
nie$_2$	[uNEG:unval]
n-words	[uNEG:val]
OP	[iNEG:unval]

Since both the NM *nie$_1$* and n-words bear [val] in both varieties of Afrikaans, both are non-strict NCLs, like French and Italian. Notice that the analysis of

98 Notice though that I have to assume that there is some short of dependency relation between nie$_1$ and *nie$_2$*, since the structure is preferred when both *nie$_1$* and *nie$_2$* co-occur. Absence of the latter, although it does not result in ungrammaticality, is a less preferred structure.

Afrikaans as non-strict NCL has the additional advantage that it can account for the availability of a DN reading with a verum focus interpretation. Recall the DN reading is not legitimized by n-words with strict NC properties:

(202) Speaker A: **Dhen** efage *kanis*? *Greek*
NM ate n-body?
'Didn't anybody eat?'
Speaker B: *Kanis* **DHEN** efage
n-body NM ate
'Nobody ate'/'#Nobody didn't eat!'

The analysis of Afrikaans as a non-strict NCL predicts that co-occurrence of the NM with a preverbal n-word will result in ungrammaticality if one of the two elements is unstressed, as was the case in Italian with preverbal *nessuno* (repeated below for convenience in (203)).

(203) *Nessuno* (***non**) ha telefonato
n-body NM has called
'Nobody has called'

If, however, the NM is stressed, a verum focus interpretation is induced, as repeated in (204).

(204) Speaker A: *Nessuno* ha telefonato
n-body has called
'Nobody has called'
Speaker B: *Nessuno* **NON** ha telefonato
n-body NM has called
'Nobody has not called'

This is also the case in Afrikaans, as has been seen above and repeated in (205). Co-occurrence of an n-word with *nie*$_1$ results only in a DN reading, and never

in a NC interpretation. If Afrikaans is analysed as a non-strict NCL, then the fact that DN interpretations are available under verum focus is in accordance with the properties of other non-strict NCLs. Similarly to Italian *nessuno*, *niemand* bears a [val] feature, so that it can value the [unval] of the OP, blocking the NM for reasons of economy. However, if both the n-word and the NM co-occur, then the sentence is grammatical on a verum focus meaning:

(205) *Niemand* het **NIE**$_1$ die werk voltooi **nie**$_2$ *Variety A/B*
n-body have NM the work completed NM
DN: 'Nobody hasn't completed the work'
*NC: 'Nobody completed the work'

So, it seems as if Afrikaans receives a straightforward account if it is analysed as a non-strict NCL. The question that arises from the present perspective is where exactly the difference between the two varieties comes from. Recall that variety A differs from variety B in that speakers of variety B allow additionally a NC reading when two n-words co-occur, as repeated in (206), while the DN reading is accepted in both varieties.

(206) *Niemand* het *niks* gesien *nie*
n-body have n-thing seen NM
DN: 'Nobody saw nothing' *Variety A/B*
NC: 'Nobody saw anything' *Variety B*

The fact that two n-words give rise to a NC reading is in accordance with the properties of non-strict NCLs. Non-strict NCLs give rise to a NC reading with multiple n-words similarly to Afrikaans, as shown in (207).

(207) *Nessuno* a *nessuno* ha telefonato
n-body to n-body has called
'Nobody has called anyone'

The above analysis entails that variety B shares the same properties with other non-strict NCLs: it licenses a NC reading with two n-words, but excludes it when an n-word and an NM co-occur. What actually remains unanswered is how and why speakers of variety A are prevented from licensing a NC reading with two n-words.[99] I speculate that since both numerations with one or two n-words give rise to the same NC reading, speakers of variety A only allow the less marked numeration with a single n-word. This implicates that there is no sharp difference between the two varieties. Their only difference resides in the ban on an additional numeration in variety A.

5.4 Negation in French

5.4.1 French in a unary system

Standard French has been analysed as a strict NCL (Zanuttini, 1991), since more than one negative element, *ne* and *pas*, result into a single negative meaning (208). Standard French needs both *ne* and *pas*, sandwiched around the verb, to negate the sentence:

(examples adopted from Zeijlstra, 2014)

(208) Jean *ne* mange *pas* *Standard French*
Jean ne eat pas
'John doesn't eat'

Colloquial French, on the other hand, licenses the construction with or without the particle *ne*, as illustrated in (209). By contrast, a single *ne* cannot negate a sentence on its own even in colloquial French (210).

(209) Jean (**ne**) mange **pas** *Colloquial French*

[99] Another possible, but less appealing to my view, explanation could be that speakers of variety B have started treating Afrikaans as a strict NCL, assigning [unval] to n-words. This would mean that n-words are ambiguous and are either assigned [val] in cases of DN or [unval] in cases of NC. However, since a NC reading is also available in non-strict NCLs in which n-words bear [val] (cf. (207)), there is no reason to assume that speakers of variety B in Afrikaans treat n-words differently, assigning to n-words either [val] or [unval].

(210) *Jean **ne** mange

(211) Jean mange **pas**

What is interesting about French is the asymmetry between the two negative particles surrounding the verb, similarly to Afrikaans above. *Ne* co-occurring with n-words always results in a NC reading (212), while the particle *pas* with an n-word necessarily leads to a DN interpretation, exemplified in (213) (cf. (209)):

(212) *Personne* (**ne**) mange *rien*
n-body NM eat n-thing
*DN: 'Nobody doesn't eat anything'
NC: 'Nobody eats anything'

(213) *Personne* (**ne**) mange **pas** (*rien*)
n-body NM eat NM n-thing
DN: Nobody doesn't eat (anything)'
*NC: 'Nobody eats anything'

In a more recent version of his analysis, Zeijlstra (2014), building on Penka (2007), argues that the difference between *ne* and *pas* can be accounted for if formal properties and semantic properties of negative expressions are treated separately. The typology he proposes for negative elements is the following:

(214)

pas:	¬
ne:	NPI
n-words:	[uNEG]
OP:	¬, [iNEG]

This version is similar in spirit to the proposed analysis, but Zeijlstra assumes that elements with semantic features do not necessarily participate in feature checking relations. That is, an element may have a semantic property X without a corresponding formal feature. This is considered to be the case with *pas* which is argued to introduce semantic negation without taking part in a featural relation with n-words. This is why example (213) only gives rise to a DN reading. An OP is needed to check the [uNEG] of the n-words, yielding a DN interpretation because semantic negation is introduced by *pas* ([¬]) and another one by the covert OP triggered by the n-words present in the structure. Since *pas* cannot participate in feature checking, an OP must check the [uNEG] of the n-words, and hence only a DN reading is available in (215):

(215) $[OP_{[iNEG]}$ Personne$_{[uNEG]}$ (ne) mange pas$_{[\neg]}$(rien)$_{[uNEG]}]$

On the other hand, *ne* is analysed by Zeijlstra as a negative polarity item (NPI). If it carried [iNEG] its presence would suffice to negate the sentence, contrary to case. The same would hold if *ne* were specified [uNEG], as one would be wrongly led to expect that *ne* introduces a covert OP. If, however *ne* is analysed as an NPI, it is correctly predicted that an NPI cannot trigger the presence of a negative OP.[100] In the next section I will illustrate how French fits in a binary featural system attesting to a further advantage of the proposed analysis.

5.4.2 French in a binary system

Based on the assumptions of the proposed analysis, I will argue that French is a non-strict NCL. In this way, no further assumption is needed regarding the different roles of *ne* and *pas*. I propose that *ne* and *pas* reflect the same

100 Evidence for the NPI behaviour of the element *ne* is provided by the observation that it appears in downward entailing environments as in the example below with the comparative construction:

(example from Zeijlstra, 2014)
(i) Jean est plus malin que Pierre (ne) l'est
Jean is more smart PRT Pierre ne it is
'Jean is smarter than Pierre is'

difference as *nie₁* and *nie₂* in Afrikaans. *Ne* behaves like *nie₂*, while *pas* like *nie₁*. This means that *ne* bears [uNEG:unval], similarly to Afrikaans *nie₂,* and *pas* bears [uNEG:val], similarly to Afrikaans *nie₁*. This analysis can account for the fact that *ne* by itself cannot trigger the presence of an operator, as the feature of the OP remains unvalued and the derivation crashes in the absence of any element with [val], as seen in (216). Thus, the NM *ne* is analyzed similarly to the NM *nie₂* in Afrikaans.

(216) *Jean $OP_{[iNEG:unval]}$ **ne**$_{[uNEG:unval]}$ mange

On the other hand, *pas*, just like *nie₁*, bears [val]. This means that its presence suffices to license the OP, which is empirically correct as was shown above for Afrikaans *nie₁* and documented by (217) for French.

(217) Jean $OP_{[iNEG:unval]}$ mange **pas**$_{[uNEG:val]}$

Since French is a non-strict NCL, an n-word or an NM with [val] is needed to check the [unval] of the OP and to trigger the presence of the latter. The grammaticality of example (212), repeated in (218) below, which exclusively allows a NC reading is now easily accounted for. More precisely, the presence of an n-word with [val] suffices to license the presence of the semantic operator. Therefore, the NM *pas* is predicted to be excluded by economy due to the presence of the n-word. On the other hand, the NM *ne* which bears [uNEG:unval] is predicted to be optional, which is empirically verified. The DN reading is excluded by the presence of a single semantic operator.

(218) *Personne* (**ne**) mange *rien*
n-body NM eat n-thing
*DN: 'Nobody doesn't eat anything'
NC: 'Nobody eats anything'

If the NM *pas* co-occurs with an n-word the result should be grammatical too, but this time only with a DN interpretation, as in non-strict NCLs (recall the discussion of Italian and Afrikaans in (204) and (205) respectively). According to my consultants, DN readings in French as in (219) arise only in denial contexts, similarly to preverbal *nessuno* in Italian and Afrikaans. Co-occurrence of the NM with an n-word is rare and acceptable only with a DN reading, in verum focus environments. What this means is that when focused *pas* co-occurs with other n-words, it triggers an alternative OP, similarly to the focused NMs in the above-mentioned examples in Italian (204) and Afrikaans (205).

(219) *Personne* (**ne**) mange **pas** (*rien*)
n-body NM eat NM n-thing
DN: 'Nobody doesn't eat (anything)'
*NC: 'Nobody eats anything'

In (219), a second OP is introduced since the FocusP is opaque and the OP inside the FocusP cannot check the [uNEG] features of the rest n-words. As a result, a second operator is introduced (220). Therefore, the only available reading in (220) is predicted to be the one of a DN, which is in accordance with the empirical data.

(220) $[_{\text{NegP1}}\text{OP}_{\mathbf{1}[\text{iNEG:unval}]}\ \textit{Personne}_{[\text{uNEG:val}]}]$
$[_{\text{FocusP}}[_{\text{NegP2}}\text{OP}_{2[\text{iNEG:unval}]}\ (\mathbf{ne}_{[\text{uNEG:unval}]})$ mange
$[\mathbf{PAS}_{[\text{uNEG:val}]}\ (\textit{rien})_{[\text{uNEG:val}]}]]$

It has already been pointed out that if French were a strict NCL as claimed by Zeijlstra, the DN reading available in sentence (219) would remain a mystery. This is so because n-words with strict NC properties never give rise to DN readings when a preverbal n-word and an NM co-occur. On the other hand, if French is analysed as a non-strict NCL, a DN reading is expected to arise in verum focus environments if one of the two negative elements, either the NM or the n-word is stressed. The typology generated by the proposed analysis is

summarized in table 7. For convenience the table includes the counterpart elements of Afrikaans.

Table 7. The proposed typology of n-words and NMs

French	***Afrikaans***	***Features***
Ne	*Nie*$_2$	[uNEG:unval]
Pas	*Nie*$_1$	[uNEG:val]
n-words	n-words	[uNEG:val]
OP	OP	[iNEG:unval]

5.5 Extending the theory to NC of Negative markers

In this section I will briefly address the phenomenon of NC to NMs. Although the discussion is limited to dialects from Northern of Greece, the goal is to show that the analysis can be extended to all kinds of n-elements.

Based on the analysis so far, the co-occurrence of two NMs is expected to result in a DN interpretation, even in strict NCLs, as an NM can value the [unval] feature of the OP (as opposed to 'regular' n-words which bear [unval]). This is indeed the case in constructions such as (221). In standard Greek, two NMs give rise to a DN reading:

(221) **Mi**[101] **dhen** erthis! *DN reading*
NM NM come
DN: 'Don't dare not to come!'
NC: #'Don't come!'

In order for the DN reading to emerge, the NM *mi* has to bear accent, illustrated with capitals in (222). Recall that this was the case also in other non-strict NCLs, such as French, Italian and Afrikaans (cf. the previous section).

[101] The NMs co-occur only in the sequence *mi dhen*, and not **dhen mi(n)*. See also fn. 13 about the final -n on the NM *mi*(n):
(i) Mi dhen erthis!/*Dhen min erthis
NM NM come/NM NM come
'Don't dare not to come!'

(222) **MI dhen** erthis

The fact that even strict, as well as non-strict NCLs, may underlie DN readings receives a straight forward explanation on the present analysis. If one of the two NMs which bears [uNEG:val] is focused, FocusP is projected. This means that n-words inside FocusP are opaque to evaluation and a second operator needs to be introduced to value the features of the n-words. As a result, focused NMs are predicted to yield DN readings. The derivation of example (222) is similar to the ones of DN readings in other non-strict NCLs. Due to the FocusP, a second OP is introduced as shown in (223):

(223) $[_{\text{FocusP}}[_{\text{NegP1}}\text{OP}_{1[\text{iNEG:unval}]}\ \text{MI}\ _{[\text{uNEG:val}]}][_{\text{NegP2}}\text{OP}_{2}[_{[\text{iNEG:unval}}$ dhen$_{[\text{uNEG:val}]}$ erthis]

There is evidence that (222) is parsed into a biclausal structure involving coordination. To begin with, a verb may appear after the NM *mi,* as well as the connective *ke* as shown in (224) and (225). If correct, this implies that no NC reading should be available in (224), as NC is a clause bound phenomenon. This is verified as seen above (cf. (221).

(224) **Mi** (tihi) (ke) **dhen** erthis!
NM happens and NM come
'Don't dare not to come!'
NC: #'Don't come!'

(225) **Mi varethis** (ke) **dhen** erthis!
NM get.bored and NM come
'Don't get bored and you don't show up!'

Apart from the particle *ke*/'and', the particle *tihon*/'possible' may also intervene between the two NMs, as shown in (226):

(226) **Mi** (tihon) (ke) **dhen** erthis!
NM possible and NM come
'Don't dare not to come!'

It is predicted that if one of the two NMs is not stressed, then co-occurrence of two NMs in the examples above results in ungrammaticality for speakers of standard Greek. This is indeed the case; example (227) – in which no NM is stressed– does not tolerate the presence of another NM in addition to *min*. In this case only a NC reading is available:

(227) **Min** (***dhen)** erthis
NM NM come
'#Don't dare not to come!'/ 'Come'

What is interesting, though, is that there is a variety of Greek from the North of Greece, specifically in the regions of Kozani, Grevena and Thessaloniki (i.a.), which licenses a NC reading with two NMs. As shown in example (228) co-occurrence of two NMs results in a NC interpretation for speakers of Northern dialects (though note that the DN reading is not an option for (228) for any speaker of Greek).[102]

(228) Na **mi** (**dhen)** erthis, ke tha dis ti tha gini
PRT NM NM come, and will see what will happen
'If you don't come, then you will see what is going to happen'

The same holds for example (229).[103] The two NMs in the second sentence can only receive a NC reading; a DN interpretation for the NMs *mi dhen* is excluded.

[102] Notice that the NC reading is not an option in example (221) even for speakers of Northern dialects. Examples (221) and (228) differ in that in the latter case the NMs appear in the protasis of a conditional.

[103] Some speakers of standard Greek reported that they also license the NC reading of the two NMs in (229), but not in (228) which is an option only for speakers of certain northern dialects.

In combination with the negation of the first sentence *dhe*, the sentence receives an affirmative interpretation:

(229) **Dhe** ginete na **mi dhen** erthi ¬, ¬
NM happens PRT NM NM come
'It is not possible that (s)he will not come'/'(S)he will come'

A possible explanation for the optional presence of the extra NM *dhen* is that speakers may need to strengthen the meaning of the NM *min* which is used in subjunctives. This is why they include the NM that is used in indicatives, *dhen.* The co-occurrence of the two NMs in NC readings can therefore be seen as an effect of the Jespersen cycle (cf. 2.5).

As expected, the prosodic realization of the NC structure differs from the one of DN (cf. (222) above). No prosodic pause is permitted between the two NMs as illustrated in (230).

(230) *(Na **mi)** (**dhen** erthis), ke tha dis ti tha gini

In order for the NC reading to arise, the two NMs need to appear in the same prosodic phrase[104] as indicated in (231).

(231) (Na **mi dhen** erthis), ke tha dis ti tha gini

In addition, as opposed to the DN examples (224-226), no element can intervene between the two NMs, as (232) demonstrates.

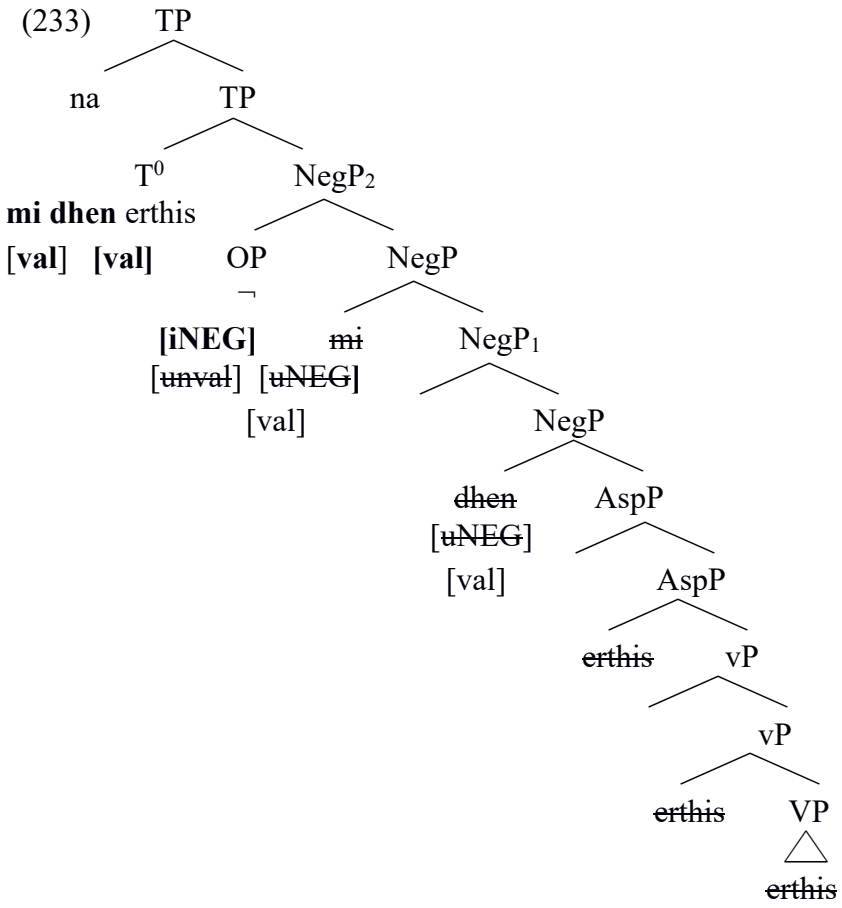
(232) Na **mi** (*tihon) (*ke) **dhen** erthis, ke tha dis ti tha gini

The proposed analysis can account for the phenomenon of NC with NMs along the following lines. The structure of (228), illustrated in (233), contains two

[104] Thanks to Caroline Féry for discussion on the prosody of these data.

NegPs; the NMs bearing [uNEG:val] occupy the Neg^0 position. However, since there is no FocusP, the [uNEG] features of both NMs are multiply checked by the OP. Next, the NMs attach to the verb and move to T^0. From the T^0 position either of the NMs can value the [unval] feature of the OP.

(233)



There are also some open issues that I need to delegate to future research though. To begin with, one has to explore exactly which structures allow NC of NMs in Northern Greek dialects, and why the DN reading is banned. For instance, it has been claimed that NC is not an option for (221), repeated in (234), even if there is no pause between the two NMs.

(234) (Na) **mi dhen** erthis
PRT NM NM come
'#Don't come!'

The same holds for the ban on DN reading in (235), an example repeated from above. It is still unclear why a DN interpretation is not available in this type of subjunctives, even if one of the two NMs is stressed:

(235) #Na **MI dhen** erthis, ke tha dis ti tha gini
PRT NM NM come, and will see what will happen
'#Come, and then you will see what is going to happen'

In sum, the fact that speakers of Northern dialects license the structure with an additional NM has been taken to be an effect of the Jespersen cycle. On the other hnad, speakers of standard Greek are not at the stage of the Jespersen cycle in which the NM *mi(n)* has weakened, hence there is no reason for them to add an extra NM— the NM *dhen*— to the numeration. Nonetheless, the specific syntactic and semantic environments that license NC and ban the DN interpretation of NMs in standard Greek and Northern dialects is a topic which is left open for future research.

5.6. Overall conclusions and open issues

Theoretical assumptions

I have proposed an analysis of NC along the lines of Zeijlstra in which NC is an instance of multiple Agreement. Moreover, it has been argued that a theory which makes a distinction between feature valuation and feature checking can properly account for the full range of NCLs. One central assumption is that the difference between strict and non-strict NCLs is not as 'strict' as it was thought to be. I have provided evidence supporting the view that semantic interpretability and feature interpretability are two distinct properties which generate a taxonomy that distinguishes among different types of negative elements. Thus, the NC phenomenon can be reduced to the combination of the two features, the semantic feature [NEG] and the formal feature [val], given in Table 8.

Table 8: the proposed taxonomy of n-elements

	[val]	[unval]
[iNEG]	- NMs of DN languages - N-words of DN languages	OP
[uNEG]	- NMs - N-words of non-strict NCLs - N-words with *transparent* negative morphology in hybrid languages	- NMs (i.e *nie*$_2$ of Afrikaans, *ne* in French) - n-words with *non-transparent* negative morphology/ 'regular' n-words

It is maintained that speakers assign different values to the formal features, but keep the status of NMs and n-words constant with respect to their semantics. As argued above, the difference between strict and non-strict NCLs is considered to be minimal. This implies that speakers of NCLs do not actually switch from one system to an entirely different one, which would remain mysterious. Rather speakers assign a different value [+] or [-] to a formal feature. Negative elements with [uNEG:val] features may a priori occur in both types of NCLs. Finally, although I haven't extended my analysis to DN languages, it is natural to assume that negative elements of DN languages should bear [iNEG:val], as shown in Table 8. This means that the difference between DN languages and NCLs resides in the different status of the [NEG] feature. Both NMs and n-words in DN languages bear [iNEG:val].

One welcome result of the proposed analysis is its flexibility which allows us to account for hybrid languages. In addition, the system captures languages which show speaker variation (i.e. Afrikaans), and differences between dialects (i.e. Northern dialects vs. standard Greek). Further, it explains the availability of a DN interpretation in non-strict NCLs and the ban on DN readings in strict ones, which remained a mystery in the latter set of languages under previous accounts. Furthermore, current assumptions provide a better understanding for why an NM is always obligatory with preverbal elements in strict NCLs (cf. Penka, 2011).

The analysis has non-trivial implications for the mapping between morphology, semantics and syntax. In particular, the syntactic processes

implicated in the distribution of negative elements appear to have access to information regarding the internal morphological make up of negative elements in that they recognize the presence of [val] features in transparent forms only.

Another significant result is that there has been evidence that prosody plays a role in *Agree*, a new observation to the best of my knowledge. An element with [val] can value the [unal] of the OP, as long as they meet certain prosodic restrictions. We have seen that in all cases in which a DN reading was available in a language or a dialect of a NCL, one of the two n-elements had to be stressed. This has been taken as an indication that there are two separate phrases, hence two semantic OPs. On the other hand, NC arises when stress is absent and when the two n-elements appear in the same prosodic phrase (cf. (231)). Given that prosody co-determines possible Agree relations, it is reasonable to speculate, then, that feature valuation takes place at PF.

Open issues

My analysis has been motivated by data from two hybrid languages, Greek and Hungarian, and from speaker variation in Afrikaans and French. But a thorough investigation is still needed in order to test whether there are more NC languages like Greek and Hungarian. Note that both Hungarian and Greek have been until recently considered to be strict NCLs. The picture has turned out to be more complex, though. Thus, one needs to test whether other strict NCLs also display hybrid properties. The proposed analysis makes specific predictions regarding 'regular' strict and non-strict NCLs: languages with morphological negative elements are predicted to show non-strict NC properties, while languages with negative elements without negative morphology (i.e. focused wh-elements) are expected to show strict NC properties. This prediction seems to be borne out for non-strict NCLs; in Italian and Spanish the n-word *nobody*, *nessuno* and *ningún* respectively, carry morphological negation, stemming from Latin *nec*, 'not' and *-uno* (Haspelmath, 1997; Roberts, 2014 respectively). Similarly in Portuguese, *ninguém* originates from Latin *nec* and *quem*, which means 'someone' (Alkire & Rosen, 2010). We have seen that the same holds not only for Greek *ou*-elements, but also also for *mi*-elements, negative particles which consist of the

NM *mi(n),* i.e. the standard NM used in subjunctives and gerunds. All elements of this class exclude the NM when they appear preverbally. A thorough study is needed to examine whether this prediction holds in all NCLs, strict and non-strict ones. Finally, a question that remains open is whether the morphology of n-words has changed in cases where a language has switched from strict to non-strict one, or vice versa (cf. the case of Greek or Hungarian), and how this change took place.

In sum, it is left for future research to determine to which extent the proposed analysis holds for other NCLs, and whether it can be extended to DN languages.

Chapter 6

Semantic properties of 'oute' and other Greek counterparts of 'even'

Having discussed Negative Concord involving *ou*-elements in Greek, I will now turn to explore the semantics of the *ou*-particle *oute*. *Oute*, as already mentioned, corresponds to ambiguity between an interpretation that corresponds to 'neither/nor' in English (236), and an NPI reading roughly equivalent to 'even' (237). It was seen that *oute*, depending on its interpretation, differs in its distribution (2.2-2.3). *Oute* on its 'neither/nor' reading is referred to as *oute*$_1$, while *oute*$_2$ is reserved for the NPI interpretation.

(236) *Oute*$_1$ tilefonise (*oute*$_1$ irthe)
oute called oute came
'Neither did (s)he call (nor did (s)he come)'

(237) *Oute*$_2$ kan tilefonise
oute PRT called
'She didn't even call'

In the next section, I will first investigate the semantic properties of *oute*$_1$ 'neither/nor' (6.1). Turning from there to *oute*$_2$, I will argue that *oute*$_2$ is the Greek counterpart of *even* in downward entailment (DE) environments (6.2). Subsequently, I will shortly present the properties of some other particles that Greek employs as translation equivalents of EVEN[105], namely *kan* (6.3), *akomi ke/ mehri ke* (6.4) and *esto* (*ke*) (6.5) (Giannakidou, 2007). Overall, the chapter will argue for the following claims:

(i) *OUTE*$_1$ ('neither, nor') is an anaphoric element similar to 'too' in English introducing contrastive topics (Krifka, 1999; Büring, 2014).

[105] Following Giannakidou's (2007) notation, I refer with EVEN to *even* cross linguistically.

The semantic analysis proposed for *too* by Rullmann (2003) can be extended to *oute$_1$* (6.1).

(ii) The behavior of *OUTE$_2$* (NPI '*even*') and other particles employed in Greek support a scope analysis of EVEN.

(iii) I will provide evidence that the particle *kan* that usually co-occurs with *oute$_2$* is a semantic minimizer and should be analyzed along the lines of the theory proposed in Chierchia (2013) (see 6.3).

(iv) The two Greek EVEN particles employed in episodic sentences, *akomi ke* and *mehri ke* are not identical in meaning. I will provide evidence that *mehri ke* is an *absolute* particle, always marking an endpoint, while *akomi ke* is a *relative* one (following Schwenter's (1999, 2000) and Schwenter & Vasishth's (2000) distinction (see 6.4)).

(v) Finally, I will briefly address the syntactic properties of *esto* (*ke*) in section 6.5 delaying a more thorough discussion until chapter 7.

6.1 *Oute$_1$* 'neither/nor'

6.1.1 Oute$_1$ 'neither/nor': an additive anaphoric particle

Starting with *oute$_1$*, example (238) documents that the coordination particle has to precede its associate. In (238) *oute$_1$* can be associated with the DP following to its right, *o Nikos*, but not with the preceding VP, as the continuation shows. In addition, the particle has to appear adjacent to its associate. The associate of the particle in (239) is the whole VP/IP. Note that when *oute$_1$* conveys the

meaning of 'neither/ nor', it, bears prominent stress[106] indicated with capital letters in (238) and (239):[107]

(238) Dhen tilefonise *OUTE$_1$* o Nikos, *OUTE$_1$* i Anna
NM called *oute* the Nikos oute the Anna/oute
/#*OUTE$_1$* estile minima
oute sent message
'Neither did Nikos call, nor did Anna/# nor did he send a text message'

(239) *OUTE$_1$* tilefonise o Nikos, *OUTE$_1$* estile minima
oute called the Nikos oute sent messsage
'Neither did Nikos call, nor did he send a text message'

Moreover, *oute$_1$* imposes an anaphoric requirement which needs to be resolved in its local context. If the presupposition is not satisfied, the sentence is infelicitous as shown in (240). In the given context, the presupposition triggered by the particle *oute$_1$* is not met because there is no other person mentioned in the common ground who did not solve the exercise apart from Anna, resulting in infelicity.

106 Recall that *oute$_2$* also has to precede its associate and appear adjacent to it (i), similarly to *oute$_1$*. If the particle precedes the verb, as in (ii), then it modifies the whole VP, and not the DP, as in (i). However, as opposed to *oute$_1$*, the particle does not bear prominent stress, but its associate does (see (i)):

(i) Dhen tilefonise *oute$_2$* i Anna
NM called oute the *Anna*
'Not even Anna called'

(ii) *Oute$_2$* tilefonise i Anna
oute called the Anna
'#Not even Anna called'/ 'Anna did not even call'

107 See in appendix III the spectrogram for *oute$_1$*.

(240) O Nikos dhen efage ti salata. #*Oute*$_{1}$ i Anna elise tin
the Nikos NM ate the salad. Oute the Anna solved the
askisi[108]
exercise
'Nikos didn't eat the salad. Neither did Anna solve the
exercise'
Presupposition: there is a person other than Anna who
did not solve the exercise

On the other hand, the anaphoric requirement is satisfied in (241), since there is another person mentioned in the discourse (*Nikos*) who did not solve the exercise. Hence, the sentence is felicitous with *oute*$_{1}$.

(241) O Nikos dhen elise tin askisi. *Oute*$_{1}$ i Anna tin elise
the Nikos NM solved the exercise. Oute the Anna clitic
solved
'Nikos did not solve the exercise. Neither did Anna solve
it'

This anaphoric requirement is a characteristic property of additive particles, illustrated for English with the additive particle *too* in (242) (Heim, 1990; Kripke, 2009). If the antecedent does not fulfill this requirement, as in (242) and (243), the sentence is infelicitous, similarly to (240).

(242) Nikos ate the salad. #Anna solved the exercise *too*
Presupposition: there is a person other than Anna that
solved the exercise

[108] I consider that the particle modifies the DP and not the VP/IP in which case (240) would be felicitous. The same holds for example (243).

(243) Peter didn't eat the salad. #Neither did Anna solve the exercise
Presupposition: there is a person other than Anna that did not solve the exercise

In (244) and (245) the presupposition of the particle is satisfied and the sentences are accordingly acceptable in their local context.

(244) Nikos solved the exercise. Anna solved the exercise *too*
Presupposition: there is a person other than Anna that solved the exercise

(245) Nikos didn't solve the exercise. Neither did Anna solve the exercise
Presupposition: there is a person other than Anna that did not solve the exercise

Based on the above data, it can be concluded that *oute$_1$* behaves similarly to the additive particles *too* and *neither* with respect to its anaphoric requirement.

6.1.2 Oute$_1$ 'neither/nor': a Contrastive Topic marker

Another central semantic property of *oute$_1$* is that it introduces alternatives. More precisely, *oute$_1$* is a contrastive topic marker the function of which is to indicate that the answer is not interpreted exhaustively. *Oute$_1$* provides an answer to a question and implies the presence of a set of alternatives. Unlike focus markers which exclude all focus alternatives, the contrastive topic marker *oute$_1$*[109] provides information on the issue at hand (the topic) but does not

[109] Contrastive Topic stress involves a BA contour, namely a rising accent (B), followed by a focused constituent marked by a falling accent (A). This is shown in the example in (i) adopted from Krifka (1999). In (ii) CT marks the contrastive topic and F the focus constituent (Büring, 1997, 2014).

(i) Sam ate the rice. But what about Fred? What did he eat?
FRÉD ate the BÈANS
B **A**

(ii) [FRED]$_{CT}$ ate the [beans]$_F$

exclude all other alternatives. For instance, example (246) from Büring (2014), is interpreted exhaustively, yielding the inference that nobody else was kicked out. On the other hand, in (247), in which the answer is a contrastive topic marked with a subscript CT, the pronoun *she* is not interpreted exhaustively. The sentence implies that there is another person who kicked someone else. The answer in (247) could be continued by an expression such as '. . .while John kicked Anna out'.

(examples from Büring ibid.)

(246) Who did they kick out?
They kicked ME out

(247) Who did they kick out?
She$_{CT}$ kicked ME out

I argue that in the case of *oute$_I$* the associate of the particle is always a contrastive topic and that *oute$_I$* functions as a contrastive topic marker. In example (248), *oute$_I$* marks the presence of an alternative person who did not come to the party, hence its associate is a contrastive topic. Due to the fact that the particle is also anaphoric, the associate must be present in the active context (whereas in (247) the alternative is implied).

(248) A: Who came to the party?
B: Dhen irthe o Petros. *Oute$_I$* i Anna$_{CT}$
NM came the Petros. oute the Anna
'Petros did not come. Neither did Anna'

Oute$_I$ also meets the other criteria proposed in Büring (2014) for an element to qualify as a contrastive topic. Büring defines the Contrastive Interpretation Rule

(CIR), according to which a contrastive topic has to be currently *pertinent*, *logically independent* and *identifiable.*[110]

The first criterion, being currently pertinent, requires that a contrastive topic has to be relevant to the question under discussion. For example, *Spain* in (249a) cannot be understood as a contrastive topic, because it is not pertinent to the question, which is about England. Although the associate of the particle *oute*$_1$ is not an exhaustive answer, and the anaphoricity of the particle is satisfied, the answer is still not pertinent, as it does not provide a relevant answer to the question. On the other hand, the answer in (249b) is pertinent because the speaker provides a relevant answer to the question at hand by mentioning that Spain is not playing with England either (apart from Brazil), which entails that another team should play with England. This provides evidence that the associate of *oute*$_1$ shows the same properties as a contrastive topic:

Pertinence

(249) Who is playing England tonight? Brazil is not playing England

a. #*Oute* i Ispania$_{CT}$ pezi me tin Ellada
oute the Spain plays with the Greece
'Neither is Spain playing Greece'

b. *Oute* i Ispania$_{CT}$ pezi me tin Agglia
oute the Spain plays with the England
'Neither is Spain playing England'

---

110 Büring argues that the three requirements are conventional implicatures triggered by the presence of a contrastive topic (CT) in the structure. Formalizing the idea within alternative semantics, Büring marks $[[S^{CT+T}]]^{O}$ for the ordinary semantic value, $[[S^{CT+T}]]^{F}$ for the focus value, and $[S^{CT+T}]]^{CT}$ for the contrastive topic alternatives. Failure of the CIR does not mean that the answer is infelicitous; rather that it is not a contrastive topic answer.

(i) **Contrastive Topic -Interpretation Rule (CIR)** (Büring, 2014)
For a sentence S_{CT} to be felicitous, there must be at least one question meaning in S_{CT} CT-value which is
a. currently pertinent *Pertinence*
b. logically independent of $[[S^{CT+T}]]^{O}$ *Independence*
c. identifiable *Identifiability*

The same restrictions apply to English *neither.* Although there is an antecedent in (250), the answer in (250a) is infelicitous, as it is not pertinent to the question at hand. On the other hand, the answer in (250b) is pertinent, similarly to (249b), hence felicitous.

(250) Who is playing England tonight? Brazil is not playing England
a. *#Neither* is Spain$_{CT}$ playing **Greece**
b. *Neither* is Spain$_{CT}$ playing **England**

Similar facts hold when it comes to the additive particle *too*.[111] As shown by (251) the associate of *too,* has to be relevant to the question (251b), otherwise the sentence is infelicitous (251a).

(251) Who is playing England this month? Brazil is playing England
a. #Spain$_{CT}$ is playing Greece *too*
b. Spain$_{CT}$ is playing England *too*

The second criterion which the associate of *oute$_{I}$* also meets, consists in the requirement that a contrastive topic has to be independent, in other words, non-exhaustive. For this reason, the answer in (252a) is not a legitimate contrastive topic answer, as it receives an exhaustive interpretation. On the other hand, as shown in (252b), the associate of *oute$_{I}$* can be interpreted as a contrastive topic. Its associate, *Maria*, belongs to one of the alternatives that can answer the question, which means that the associate of *oute$_{I}$* qualifies as a contrastive topic. This contrast arises because in (252a) all alternatives are excluded, hence the associate is interpreted as a focus element, and not as a contrastive topic. Note that the answer in (252a) is felicitous with an exhaustive meaning. But in this

111 Note that the example in (251) has been slightly changed from the original example used by Büring; the adverb *tonight* used in the original example has been replaced by *this month*, since it would be impossible for a team to play two games on the same day.

case, the particle in interpreted as *oute*$_2$ (‘*even’*). Obviously, this is not the reading we are interested in.

Independence

(252) Aren't these two from Hungary?

a. *#Oute* enas$_{CT}$ den ine apo tin Ougaria
oute one NM is from the Hungary
‘Not even one of them is from Hungary’

b. O Janis$_{CT}$ dhen ine apo tin Ugaria. *Oute* i Maria$_{CT}$
the Janis NM is from the Hungary. Oute the Maria
‘John is not from Hungary. Neither is Mary’

The same applies to English particle *neither.* Example (253a) is interpreted exhaustively resulting in infelicity (it is marked as infelicitous with a contrastive topic interpretation). On the other hand, example (253b), which introduces a contrastive topic, is acceptable in the context given.

(253) Aren't these two from Hungary?

a. *#Neither* is from Hungary$_{CT}$

b. John$_{CT}$ is not from Hungary. *Neither* is Mary$_{CT}$

Turning to *too*, its associate is always interpreted as non-exhaustive. The question in (254) restricts the subject denotation, which serves as topic, to two individuals. The associate of *too* cannot be both John and Mary, indicating that (254a) receives an exhaustive interpretation. On the other hand, example (254b) is felicitous, as the associate of *too* is independent and not exhaustive.

(254) Are these two from Hungary?

a. #John and Mary$_{CT}$ are from Hungary *too*

b. John is from Hungary. Mary$_{CT}$ is from Hungary *too*

Finally, *oute$_1$* is subject to the condition of *identifiability.* This criterion requires that the information provided must be appropriate for the current question. Although (255a) and (255b) share the same assertive meaning, only (255b) is an appropriate answer to the question at hand. In (255a), what is contrasted are the dates 12th and 13th of September, while (255b) contrasts John's to Mary's birthday. The contrastive topic has to be identifiable, meaning that it must provide an answer to the question at hand in an identifiable way. The problem with (255a) is that it is not clear what is considered to be a topic, and, thus it is not clear what is contrasted.

Identifiability

(255) I think that your children' s birthdays are on the 12th and 13th of September. Is that right?

a. #Stis 12$_{CT}$ dhen ine ta genethlia tu Jani. *Oute* stis
to.the 12 NM is the birthday the Jani. Oute to.the
13$_{CT}$ tis Marias
13 the Maria
'On the 12th is not John's birthday. Neither is on the 13th Mary's'

b. Ta genethlia tu Jani$_{CT}$ den ine stis 12. *Oute* tis
the birthday the Jani NM is to.the 12. Oute the
Marias$_{CT}$ stis 13
Maria to.the 13
'John' birthday is not on the 12th. Neither is Mary's on the 13th'

A similar restriction holds for the English particle *neither*. Only (256b) is an appropriate answer to the question.

(256) I think that your children's birthdays are on the 12th and 13th of September. Is that right?
a. # On the $12th_{CT}$ is not John's birthday. *Neither* is …
b. John's $birthday_{CT}$ is not on the 12th. *Neither* is…

As expected by now, English *too* patterns along with *neither*. As before, I have slightly changed the original example in order for *too* to be felicitous. Both examples in (257a) and (257b) share the same semantics, but only (257b) is an appropriate answer to the question at hand. The associate of *too*, similarly to *neither* and *oute$_1$*, needs to be identifiable.

(257) I think that your children's birthdays is on the same day on September. Is that right?
a. # On the $12th_{CT}$ is John's birthday. On the $12th_{CT}$ is Mary's birthday *too*
b. John's $birthday_{CT}$ is on the 12th. Mary's $birthday_{CT}$ is on the 12^{th} *too*

Based on the evidence provided so far, I conclude that *oute$_1$* should be treated as an additive particle similarly to the English additive particle *too*; more precisely as the negative counterpart additive particle *neither*. *Oute$_1$* shares the same properties with additive particles with respect to its anaphoric requirement and its contrastive topic nature.

6.1.3 A semantic analysis for oute$_1$

Since *oute$_1$* behaves like the additive particle *too*, the semantic analysis proposed for *too* can be extended to *oute$_1$.* It is standardly assumed the additive particle *too* asserts its associate constituent, the prejacent (p), (258b) and introduces alternatives that are semantically of the same type as the prejacent. In addition, the particle induces the presupposition that there is a non-identical alternative to the sentence containing *too* that is true (258c) (Rooth, 1985, 1992; Krifka, 1999 i.a).

(258) a. *Too*$_{1}$ ... [p$_{1}$]...
b. asserts [p]
c. presupposes: ∃p'≠ p

I propose that, similarly to the additive particle *too*, *oute*$_{1}$ asserts its associate constituent (259b) and introduces alternatives of the same type as the associate constituent. The presupposition states that there is a non-identical alternative to the sentence which is true (259c). In example (260), *oute*$_{1}$ asserts that Anna did not call and presupposes that there is another individual different from Anna who did not call.

(259) a. *Oute*$_{1}$ ... [p$_{1}$]...
b. asserts [p]
c. presupposes: ∃p'≠ p

(260) *Oute* i Anna tilefonise
oute the Anna called
'Neither did Anna call'

Rullmann (2003) within the framework of alternative focus semantics proposes a semantics for the additive particle *too* (Rooth, 1985, 1992). Rooth (ibid.) assumes that a focused constituent is marked by a focus feature F in the syntactic representation. Each expression comes with an ordinary semantic value $[[\alpha]]^{0}$, and a focus value $[[\alpha]]^{f}$. For instance, the focus value of the expression 'Anna called too' in (261) is the set of all propositions of the form 'x called', where the variable x ranges over the individual alternatives for *Anna*. The focus value of a sentence without a focused constituent is simply the singleton set containing its ordinary semantic value. Moreover, a focus particle can only associate with a focused constituent that it c-commands. The particle *too* presupposes that there is at least one salient proposition of the same form which is true, as specified by (262c):

(261) Anna called *too*

(262) Semantics of *too* (Rullmann, 2003)

a. ***Ordinary*** semantic value: $[[\text{p } too]]^0=[[\text{p}]]^0$

b. ***Focus*** value: $[[\text{p too}]]^f=\{[[\text{p}]]^0\}$

c. ***Presupposition***:

[p *too*] presupposes that there is at least one contextually salient proposition $q \in [[p]]^f - \{[[a]]^o\}$ such that q is true

Since *oute1* shares the semantics of the additive particle *too,* I adopt the semantics proposed for *too* and apply it to *oute1* making the necessary changes in order to accommodate its negative properties. More precisely, as shown in (263), I propose that *oute1* adds a non-scalar presupposition to the host sentence, requiring that there be a salient proposition for which the property in question holds. Note that negation is a presupposition hole in the sense of Karttunen and Peters (1979), and thus it does not affect the presupposition of the sentence given in (263c):

(263) Semantics of *oute1*

a. **Ordinary** semantic value: $[[\text{p } oute]]^0=[[\text{p}]]^0$

b. **Focus** value: $[[\text{p } oute]]^f=\{[[\text{p}]]^0\}$

c. **Presupposition**: [p *oute*] presupposes that there is at least one contextually salient proposition q $q \in [[p]]^f - \{[[a]]^o\}$ such that q is true

Recapitulating briefly, the analysis proposed for the additive particle *too* has been adopted and extended to the particle *oute1.* I have argued that *oute1* is an additive anaphoric particle marking contrastive topic.

6.2 *Oute₂* and the other counterparts of *even* in Greek

Turning to *oute₂*, we have already seen in the previous chapters that *oute₂* conveys the meaning of *even* in DE environments. As has also been pointed out, *oute₂* cannot appear in positive episodic sentences as in (264) without the presence of the NM (at least for a variety of Greek native speakers). *Oute₂* usually co-occurs with the particle *kan*, as in (264). The associate of the particle *oute₂* is considered to be the most likely element on a pragmatic scale, the most likely person to have called in the case at hand. A possible salience scale could look as in (265), according to which it is more likely that the Secretary of State calls, less likely that the minister calls and least likely that the Prime Minister calls.

(264) *Oute₂* (*kan*) o ifipurgos *(dhen) tilefonise
oute kan the secretary.of.state NM called
'Even the Secretary of State did not call'

(265) Scale of likelihood: the Secretary of State calls > the Minister calls > the Prime Minister calls
The symbol '>' stands for 'more likely than'

In episodic sentences with positive polarity, two other particles are employed, namely the particle *akoma* (or its allomorph *akomi*[112,113]) or the particle *mehri*[114]

112 For reasons of presentation, I will use in the examples only the allomorph *akomi ke*. The choice is incidental.

113 Greek particle *akoma* was in use in medieval times, during which at some point combined with the additive *ke*, consequently receiving the meaning of *even* (Kriaras 2017). The adverb *mehri* was in use in ancient Greek, but was limited to a spatial interpretation, 'as far as, so far as, up to' (LSJ 2017). Similarly to *akoma ke, mehri ke* received the *even* interpretation in medieval times as well (Kriaras, ibid.). A detailed research regarding the exact time the change took place in either case is left for another occasion. Hoeksema (2008) argues that the driving force for these changes in semantics is the need for semantic specialization. New interpretations show up in order to specialize the meaning; in the case at hand, it is to mark the endpoint.

114 There is another particle *eos ke* which can also convey the meaning of *even* when the associate expresses some sort of measurement as seen in (i). (cf. English *till*/*until*). Example (i) involves measurement of distance, which renders *eos ke* licit. Since its use is more restricted, I will leave it aside in the rest of the discussion on Greek *even*.

combined with the conjunction *ke* (Giannakidou, 2007) as illustrated in (266). The associate of *mehri ke/akomi ke* in (266) is considered to be the least likely person to have called. Since the Prime Minister is the least likely person to have called, the speaker uses the particles *akomi ke* and *mehri ke* to convey this meaning.

(266) *Mehri ke/akomi ke* o Prothipourgos tilefonise
mehri ke/akomi ke the Prime.Minister called
'Even the Prime Minister called'

With phonological stress on the associate and a particular intonation contour (that of exclamatives), even the conjunction *ke* by itself can encode the meaning of *even,* as shown in (267):

(267) *Ke* o prothipurgos tilefonise!
and the Prime.Minister called
'Even the Prime Minister called!'

In the case of non-episodic environments, such as imperatives (Giannakidou, 2007), Greek employs *esto* (*ke*), as shown in (268):

(268) Lise *esto ke* mia askisi!
solve esto ke one exercise
'Solve even one exercise!'

6.2.1 The lexical and the scope theory of EVEN

Two approaches have been proposed to account for the fact that *even* reverses the likelihood in positive and negative episodic sentences: a *lexical theory* and a *scope theory*. Following Giannakidou (ibid.), I will use EVEN with capital letters to indicate that the analyses in question are not restricted to English *even*,

(i) *Eos ke/mehri ke* tin Ameriki tha pigene!
eos ke/mehri ke the America would go
'(S)he would travel even to the States'

but extend to the counterparts of *even* cross-linguistically. I will briefly present both theories before discussing why the Greek facts support a scope analysis of *EVEN*.[115]

(i) *Lexical theory*

Proponents of the lexical approach (Rooth, 1985; Rullmann, 1997; Herburger, 2000; Schwarz, 2005; Giannakidou, 2007 a.o.) argue that there are two distinct lexical exponents for *EVEN*. There is regular *EVEN*, which is a positive polarity item (PPI), and whose associate is the least likely alternative as in (269). In addition, there is an NPI version of *EVEN* (270) which must appear in the scope of a NPI licenser, which induces an existential presupposition (271) and whose associate is the most likely alternative. The scalar presupposition carried by *EVEN* is provided in (272).

(269) *Even* John solved the exercise — PPI *even*
Assertion: $[[\phi]]^0$
John solved the exercise

(270) *Even* John didn't solve the exercise — NPI *even*
Assertion: $[[\phi]]^0$
John didn't solve the exercise

Semantics of 'NPI *EVEN*ϕ'

(271) *Additive*/e*xistential* Presupposition:
$\exists p\ (p \in C \wedge p \neq [[\phi]]^0 \wedge p \text{ is false})$
(there is an alternative proposition that is false)

115 For current purposes, I will refrain myself from presenting all the arguments that have been proposed in support of each theory (for an overview see Rullmann (1997)). My goal is rather modest: to inform the discussion on *even* based on the Greek facts.

(272) *Scalar* presupposition:
$\forall p((p \in C \wedge p \neq [[\phi]]^0) \rightarrow [[\phi]]^0 > p)$
(the associate of *even*, ϕ, is the most likely alternative)

An argument for the lexical theory comes from the observation that in several languages the elements used for the PPI and the NPI version of *EVEN* are morpho-phonologically distinct. Such languages are Spanish (Guerzoni, 2003), German (Hoeksema & Rullmann, 2001), Hindi (Lahiri, 2008) and Greek (Giannakidou, 2007), among others.

(ii) Scope theory

In contrast to the lexical approach, there are those who argue that there is a single lexical item *EVEN* which always associates with the least likely alternative in a likelihood scale, as illustrated in (273) (Horn, 1969; Karttunen and Peters, 1979; Wilkinson, 1996; Lahiri, 1998; Guerzoni, 2003, 2004; Nakanishi, 2006 a.o.). What happens in negative environments is that *EVEN* appears in surface structure in the c-command domain of an NPI licenser, whereas, semantically, it takes scope over negation, as exposed by (274). Since *EVEN* takes scope over negation, the alternatives now include the negative marker. This has the consequence that what is least expected is that *John didn't solve the exercise*, which is the correct interpretation of the sentence. The scalar presupposition of *EVEN* is presented in (275) and the existential one in (276).

(273) Semantics of '*EVEN*ϕ' in negative contexts
Assertion: $[[\phi]]^0$

(274) LF of *EVEN* in negative context
[even C [< not $[[\text{John}]_F$ solved the exercise]]]

(275) *Scalar* presupposition:
$\forall p\ (p \in C \wedge p \neq [[\phi]]^0) \rightarrow [[\phi]]^0 < p)$
(the associate of *even*, ϕ, is the least likely alternative)

(276) *Existential* Presupposition:

$\exists p(p \in C \wedge p \neq [[\phi]]^0 \wedge p$ is true)

(there is an alternative proposition that is true)

Both theories can properly account for the difference in the interpretation of *EVEN* in positive and negative environments, as is shown on the basis of Wilkinson's (1996) examples in (277) and (278). Consider scenario 1. In this scenario, the associate of *even* is interpreted as the least likely alternative, since even for a person who generally dislikes people, hating his father is considered least expected given that people usually love their families. On the other hand, in scenario 2, Bill is a person who generally loves people. However, if this person is to hate someone, then it is most likely to hate his father who has abused him.

(examples from Wilkinson, 1996)

Scenario 1: I know Bill is a misanthrope who can't stand most people, but...

(277) 'I refuse to believe that he *even* hates his father'

Scenario 2: Bill has been abused by his father all his life. Nevertheless, Bill is such a good-natured and loving person that...

(278) 'I refuse to believe that he *even* hates his father'

Let us see now how the the two analyses account for the different interpretation of *even* in the scenarios above. The scope analysis assumes that the associate of *even* is always interpreted as the least likely alternative, so what changes is the scope of *even*, hence the alternatives. In the case at hand, this would mean that in scenario 1 *even* takes narrow scope, namely over *Bill hates his father* which is considered as the least likely alternative. The alternatives generated are the ones in (279a). Given that Bill hating his father is less likely than Bill hating anyone else because hating his father is considered the least likely alternative.

On the other hand, in scenario 2, we need to assume that *even* takes wide scope over the whole clause, as shown in (279b). What is considered least likely in this case is to refuse to believe that Bill hates his father. This is so because if this person is to hate someone, then it is most likely that this person would hate a father who has abused him (as stated in the given scenario). As a result, it is less likely to refuse to believe that this person hates his father. Overall, in both cases the scope analysis can properly account for the data.

(279) Scope analysis

a. *Scenario 1 – narrow scope*
{Bill hates x > Bill hates y > Bill hates his father}

b. *Scenario 2 – wide scope*
{I refuse to believe that Bill hates x > I refuse to believe that Bill hates y > I refuse to believe that Bill hates his father}

Turning to the lexical approach, which assumes two different lexical items to disambiguate the two meanings, *even* is considered to always take scope from the same position. What changes is the interpretation of the associate. More precisely, the associate of the PPI *even* is interpreted as the least likely alternative, while the associate of NPI *even* as the most likely one. Thus, in scenario 1, the PPI *even* is used, whose associate is interpreted as the least likely alternative; that Bill hates his father is less likely than Bill hating anyone else, so the alternatives are the ones in (280a). Notice that the scale is the same that is assumed in the scope analysis (cf. (279a) and (280a). In scenario 2, the verb *refuse* triggers NPI *even*, so the scale is reversed, as shown in (280b). Now the associate of *even* is considered to be the most likely one. That Bill hates his father is more likely than Bill hating anyones else. Hence, the lexical analysis can also account properly for the interpretation of *even* in both scenarios.

(280) Lexical analysis

a. *Scenario 1 – PPI even*

{Bill hates x>Bill hates y>Bill hates his father}

b. *Scenario 2 – NPI even*

{Bill hates x < Bill hates y < Bill hates his father}

In sum, both theories are successful in deriving the difference in interpretation between NPI and PPI *even*. In the next section I will show how Greek, even though it employs several distinct morphological exponents to convey the meaning of *even* supports a scope analysis of *EVEN.*

6.2.2 Different manifestations of EVEN in Greek in support of a scope analysis

If the lexical theory is on the right track, then a language which lexically distinguishes NPI *even* from PPI *even* should trigger different manifestations of *EVEN depending* on context. However, this expectation is not borne out in Greek[116] as we will see in this section. I will present three cases in which the prediction is not fulfilled because particles appear in unexpected contexts.

To begin with, under the lexical approach, a language that lexically distinguishes PPI *even* from NPI *even* should use different elements in Wilkinson's scenarios (ibid.). More precisely, the Greek PPI *even* is expected to appear in scenario 1 where the associate is interpreted as the least likely alternative, namely the particles *akomi ke*/*mehri ke,* while in scenario 2 the NPI

116 For a lexical approach see Giannakidou (2007) who based on the four particles employed in Greek has argued in support of a lexical analysis of *EVEN*. A lexical theory advocates that particles which are employed for *EVEN* come with a specific interpretation. Her lexical analysis discusses *akomi ke/mehri ke* as always associated with the least expected alternative ('low likelihood' in Giannakidou's terminology) (ia), *oute* associated with the most expected alternative but with a negative existential presupposition ('high likelihood' in Giannakidou's term) (ib), while *kan* is distinguished from *oute* in that it is a high scalar *even* with a positive existence presupposition (ic). Finally, *esto (ke)* is considered an element with a flexible context-dependent scale (id), not conveying a specific likelihood (high or low).

(i) a. *akomi ke*: low likelihood EVEN which must scope over negation
b. *oute*: high scalar NPI licensed in the scope of negation with a negative existential presupposition
c. *kan*: high scalar NPI licensed in the scope of negation with a positive existential presupposition
d. *esto*: flexible scale EVEN; low scalar EVEN defined not on likelihood but on contextually specified scale

even, oute (*kan)*, should be used due to the presence of the verb *refuse*, which triggers a negative meaning.

Next, the Greek counterpart of (277) which is felicitous in scenario 1 is provided in (281). In (281), the particle *akomi ke* marks the associate DP *ton patera tu*/'his father', which is the least likely alternative to be hated.

Scenario 1: I know Bill is a misanthrope who can't stand most people, but…

(281) Arnume na pistepso oti misi *akomi ke* ton patera tu
refuse to believe that hates akomi ke the father his
'I refuse to believe that he even hates his father'

Surprisingly, we see that *akomi ke* is also used in scenario 2, but –crucially– by making use of an additional syntactic position. Apart from appearing before the DP *ton patera tu*/'his father', the particle *akomi ke* can also appear above the subordinate clause, as shown in example (282).[117] From either position it conveys the meaning that Bill's father is the most likely person to be hated, if Bill is to hate someone.[118,119] Recall that the scope analysis assumes that the particle has to take wide semantic scope to convey the meaning in (282).

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117 This is not an available syntactic position for scenario 1:
Scenario 1: I know Bill is a misanthrope who can't stand most people, but…
(i) #Arnume na pistepso *akomi ke* oti misi ton patera tu
refuse to believe akomi ke that hates the father his
'I refuse to believe that he even hates his father'

118 The particle *esto (ke)*, is also an option, but it is not the best alternative. Similarly to *akomi ke* in (282), *esto (ke)* can convey the same meaning either by preceding the DP *his father*, or the subordinate clause, as shown in (i):
Scenario 2: Bill has been abused by his father all his life. Nevertheless, Bill is such a good-natured and loving person that...
(i) ?Arnume na pistepso *esto (ke)* oti misi *esto* (*ke)* ton patera tu
refuse to believe esto ke that hates esto ke the father his
'I refuse to believe that he even hates his father'
However, as opposed to *akomi ke*, *esto* (*ke*) is not felicitous in scenario 1, as shown in (ii).
Scenario 1: I know Bill is a misanthrope who can't stand most people, but…
(ii) #Arnume na pistepso *esto (ke)* oti misi *esto* (*ke)* ton patera tu
refuse to believe esto ke that hates esto ke the father his
'I refuse to believe that he even hates his father'

119The same meaning arises with the particle *kan*, as seen in (iii):
(iii) Arnume na pistepso oti (*kan) misi kan ton patera tu
refuse to believe that kan hates kan the father his
'I refuse to believe that he even hates his father'

Scenario 2: Bill has been abused by his father all his life. Nevertheless, Bill is such a good-natured and loving person that...

(282) Arnume na pistepso (*akomi ke)* oti misi (*akomi ke*) ton
refuse to believe akomi ke that hates akomi ke the
patera tu
father his
'I refuse to believe that he even hates his father'

Turning to the element that is the analogue of the NPI *even* in Greek, the particle *oute*$_2$ (*kan*) is not compatible with scenario 2, as shown in (283). Example (283) means that Bill is expected to hate generally people, and he is most likely to hate his father. However, in scenario 2, Bill is unlikely to hate anyone, and if he does, then it is most likely that this person would be his father.

(283) Arnume na pistepso oti *oute kan*[120] misi ton patera tu
refuse to believe that oute kan hates the father his
'I refuse to believe that he does not even hate his father'

In sum, the Greek examples above suggest that there is no one-to-one distinction between lexical elements and their interpretation. The fact that the same particle, *akomi ke*, is felicitous in both scenarios is unexpected for the lexical analysis, since *akomi ke* should be banned in scenario 2. Moreover, since Greek has at its disposal a distinct NPI element for *even*, NPI *even* should be used instead. In addition, Greek better fits the scope analysis because *akomi ke* is allowed to move overtly to a higher syntactic position only where the scope analysis demands a wide scope reading of *even.* This provides evidence that the syntactic position of the particle plays a role in its interpretation (cf. (282)).

120 Recall from the discussion in chapter 2 that *ou*-elements preceding a verb exclude the NM. Notice that the same interpretation arises also when the particle appears post verbally, in which case a negative marker is required, as shown in (i):

(i) Arnume na pistepso oti *(dhen) misi *oute kan* ton patera tu
refuse to believe that NM hates oute kan the father his
'I refuse to believe that he does not even hate his father'

The second argument in support of the scope analysis concerns another example from Wilkinson (ibid.). In Greek, the counterpart of (284) can appear either with the particle *kan* (285) (Giannakidou, 2007), but it can crucially also appear with the particle *akomi ke*, as shown in (286).

(284) I am sorry I *even* opened the book!

(285) Metaniosa pu aniksa *kan* to vivlio!
be.sorry that opened even the book
'I am sorry I even opened that book'

(286) Metaniosa *akomi ke*[121] pu aniksa to vivlio!
be.sorry akomi ke that opened the book
'I am sorry I even opened that book'

Crucially, the associate of the particle is interpreted both in (285) and (286) as the least likely alternative. In other words, different manifestations of *EVEN* in Greek, *kan* and *akomi ke,* convey the same meaning, i.e. that their associate is interpreted as the least likely element on a scale. This comes as a surprise for the lexical approach because the associate of *kan* is always the most likely alternative. To account for the unexpected presence of the particle *kan* in (285), proponents of the lexical theory have to assume that there is another homophonous particle *kan* which associates with the least expected alternative in this case (Giannakidou, ibid.). However, the fact that speakers can freely switch between *kan* and *akomi ke* posits a serious challenge to the claim that *kan* in (283) and in (285) are instances of homophony. On the other hand, the scope analysis faces no problems with the facts in (285) and (286) as the likelihood scale with either element is the one in (287) in which different manifestations of *EVEN*, *akomi ke* and *kan*, associate with the least expected element.

121 Thanks to the audience of *Semantics in Athens III Workshop in Syntax-Semantics Interface* (2017) for discussion on this example.

Possible scale of likelihood for the Scope analysis

(287) {I am sorry I wrote a critique for the book > I am sorry I read the book > I am sorry I opened the book}

The last argument in support of the scope theory is the unexpected ability of *akomi ke* to associate with the numeral *one*. Since the number *one* is entailed by all higher numbers, the lexical theory predicts that it should not be able to be modified by *EVEN* in positive episodic sentences, since *one* cannot be the least likely number. As a result, it is predicted that the Greek counterparts *akomi ke*[122]/*mehri ke* should never modify *one*. However, a simple search on Google reveals several examples, as the ones in (288-290).

(288) *Akomi ki*[123] ena lepto entonis askisis ofeli tin igia![124]
akomi ki one minute intense exercise improves the health
'Even one minute of intense exercise improves health!'

(289) *Akomi ki* ena kapaki posi dinami ehi[125]
akomi ki one lid much power has
'Even one lid how powerful it is'

(290) Tha pulusame *akomi ke* gia ena euro ton OSE[126]
will sell akomi ke for one euro the OSE
'We would sell OSE[127] even for one euro'

122 For some unknown reason to me examples (288-290) are deviant with m*ehri ke*:
(i) ??*Mehri ki* ena lepto entonis askisis ofeli tin igia!
(ii) ??*Mehri ke* ena kapaki, posi dinami ehi
(iii) ??Tha pulusame *mehri ke* gia ena euro ton OSE

123 The form *ki* is an allomorph of the additive particle *ke* when the element that follows begins with a vowel. (cf. (289)-(290)).

124 Retrieved from: http://healthmag.gr/post/3487/akomh-ki-ena-lepto-entonhs-askhshs-wfelei-thn-ygeia.

125 Retrieved from: http://mykines.blogspot.gr/2015/07/blog-post_20.html.

126 Retrieved from: http://www.protothema.gr/economy/article/448415/varoufakis-poulame-ton-ose-akomi-kai-gia-1-euro/.

127 OSE stands for the Greek National Company of Transportation.

This is unexpected under a lexical approach. However, the scope theory can account for these facts since it poses no restrictions with respect to its associate. The scope theory assumes that the particle takes scope over the whole sentence, so the scalar alternatives that are induced are the ones in (291-293) for the examples (288-290) respectively.

(291) Possible scale of likelihood for example (288)
{one hour of exercise improves your health > half an hour of exercise improves your health > …> one minute of exercise improves your health}

(292) Scale of likelihood for example (289)
{100 lids are powerful> 50 lids are powerful > …> 1 lid is powerful}

(293) Scale of likelihood for example (290)
{we would sell OSE for a billion > we would sell OSE for a thousand euros >…> we would sell OSE for one euro}

In the scales above, the fact that *one* is considered to be the least likely alternative in the salient scale poses no problem. For instance, in example (288) which comes with the scale in (291), it is considered less likely that one minute would suffice to improve one's health rather than two or more minutes. Hence the particle *akomi ke* can pick out the least likely alternative. A similar account holds for the rest of the cases with *one* in the above examples. What (292) says is that it is less likely that one lid is powerful than that one hundred lids are. Similarly, in (293) it is less likely that OSE would be sold for one cent than for a billion. In this way, the scope theory captures the co-occurrence of *akomi ke* with *ena(s)*/'one', while the lexical analysis faces serious problems in accounting for these cases. Therefore, ban of *akomi ke* on *one* associate turns out to be spurious (contra Giannakidou, 2007).

Up to now I have discussed how the Greek facts shed light on the central issue in the literature regarding EVEN, notably the question whether the scope or the lexical analysis is better suited to account for *even* in negative contexts. I have argued that the different manifestations of Greek *even* are best described by the scope analysis, even though the observation that there are many particles realizing different guises of *even* at first sight seems to support the lexical analysis. I have shown that a scope analysis can capture the fact that two different elements convey the same meaning when they appear in the same syntactic position. In addition, it can account for the fact that the same element (i.e. *akomi ke*) can convey a different meaning depending on its syntactic position.

This is an interesting result, if correct. What seems to determine the interpretation of the particle is not the lexical properties the element carries a priori, rather a more complex mechanism at the syntax-semantics interface which takes into consideration both the scope of the particle and its lexical semantics. Note though, that this observation cannot be generalized, as the particles in question cannot always freely interchange, and certain elements pose syntactic restrictions regarding their distribution (recall the discussion of *oute*$_2$ (*kan)* and *esto* (*ke)* in section 6.2).

6.3 The particle *oute*$_2$ *and its relation to kan*

In this section, I am focusing on *oute*$_2$ and its relation to *kan* arguing that the latter is best analyzed as a minimizer.

Distribution of the particles oute$_2$ *and kan*

As mentioned above, the particle *oute*$_2$[128] usually associates with the particle *kan.* The presence of the latter disambiguates the two readings of *oute,* since *kan* cannot co-occur with *oute*$_1$ (Giannakidou, 2007), as illustrated in (294a).

128 *Oute kan* can stand on its own as shown in (i) and (ii), in which case it receives the meaning of *'not at all'*. This is an emphatic structure and the speaker wants to convey the meaning that nothing has happened. A possible explanation could be that *oute kan* is free-standing under ellipsis, as shown in the examples below. Sometimes, though, it is hard to reconstruct this alternative, as in the case of (ii); *oute kan* in this case stands on its own marking the endpoint of

The particle *oute₂* (with or without *kan*) marks its associate as the most likely element on the pragmatic scale. In example (294a) *oute₂* is adjacent to *Anna*, so Anna is considered the most likely person to have called. A possible pragmatic scale is the one in (294b) in which *Anna* occupies the top end of the scale.

(294) a. Dhen tilefonise *oute₂* (*kan*) i Anna
NM called oute kan the Anna
'Not even Anna called'/'#Neither did Anna call'

b. Possible scale assumed:
Anna calls > the Secretary of State calls > the Minister calls > the Prime Minister calls

The same holds for the particle *kan* which may, but does not have to, co-occur with *oute₂*. *Kan* has to be in the c-command domain of a negative element; it can be under the scope of the n-word *oute₂*, as given in (295), but it can also appear in the scope of a negative marker *dhen* (296), or in the scope of a DE operator such as *prin*/ *protu* 'before' (297) or *choris* 'without' (298) (see also Giannakidou, ibid.[129]). The two particles often co-occur, with *kan* in the scope

a scale. Speaker B's answer is paraphrased as something like 'I am really far from finishing'. I leave examples as in (i) and (ii) aside from the discussion.

(i) A: Su milise?
clitic talked
'Did (s)he talk to you'
B: *Oute kan* ~~(ipe leksi)~~.
'Not at all/not even a word (~~did (s)he utter~~)'

(ii) A: Telionis?
finish
'Are you done?'
B: *Oute kan...*
'Not at all'

129 Giannakidou (ibid.) distinguishes NPI *kan* from *kan* appearing in (i) and (ii), arguing that the latter is a PPI *kan* with a positive existential presupposition, and the scalarity presupposition of NPI *even.* See Lahiri (2008) for a criticism on the existential presupposition of *kan*.

(i) Anikses *kan* to vivlio? (Giannakidou, 2007)
opened kan the book
'Have you even opened that book?'

(ii) An me kitaksis *kan* tha se skotoso
if me look.at kan will you kill

of *oute*$_2$, but both can mark its associate as the most expected element of a pragmatic scale.

(295) Oute *kan* i Anna **dhen** tilefonise
oute kan the Anna NM called
'Even Anna didn't call'

(296) **Dhen** tilefonise *kan*[130] i Anna
NM called kan the Anna
'Even Anna did not call'

(297) Mu to ipe prin/protu *kan* ton rotiso
clitic it said prin/protu kan him ask
'He said it to me before even asking him'

(298) Mu to ipe choris *kan* na ton rotiso
me it said without kan to him ask
'He said it to me without even asking him'

6.3.1 An analysis of the particle kan as a minimizer

I argue that an analysis of the particle *kan* as a minimizer properly accounts for its properties. There is reason to believe that *kan* behaves similarly to minimizers, elements which denote a minimal quantity, extent or degree.[131]

'If you even look at me, I' ll kill you'

130 Giannakidou claims that *kan* tends to be redundant with minimum indefinites with the cardinality *one,* claiming that the structure in (i) is a marked option. This tendency has not been confirmed by my consultants; the structure in (i) is considered emphatic.

(i) O Janis dhen ipe *oute kan MIA* leksi
the Janis NM said oute kan one word
'John didn't even say a word'

131 Giannakidou (2007) analyzed *kan* as an intensifier co-occurring with *oute*$_2$. Intensifiers informally speaking are defined as "linguistic devices that boost the meaning of a property upwards from an assumed norm" (Quirk et al., 1985). Examples of such expressions in English include *very, really, extremely* among others. Similarly, Giannakidou assumes that *kan* boosts the meaning of *oute*$_2$. *Oute*$_2$ in her analysis is a minimizer which has to be in the c-command domain of a negative marker. In her analysis example (i) is expected to be ungrammatical because *oute kan* cannot co-occur without a negative marker:

(example from Giannakidou, ibid.)

Minimizers, such as *drink a drop* are deviant in conditionals expressing promises (299), but felicitous when they express threats or a causal relation as in (300) and (301) (Lakoff, 1969; Iatridou, 1991; Csipak, 2010). In other words, minimizers are content-sensitive, since their licensing depends on the content of the conditional. The same holds for other minimizers such as *lift a finger*, *give a damn* etc:

(examples from Csipak, 2010)

(299) ??If John *drinks a drop*, I will kiss him *Promise*

(300) If John *drinks a drop*, I will punch him *Threat*

(301) If John *drinks a drop*, I will be very surprised *Causal*

Similar facts hold for *kan*. *Kan* is deviant when it appears in a conditional expressing a promise (302), but felicitous when expressing a threat (303), or when there is a causal relationship between the antecedent/ protasis and the consequent/apodosis (304).

(examples adopted from Csipak, 2014)

(302) ???An pi *kan* mia leksi, tha ton filiso *Promise*
if say kan a word, will him kiss
'If he even says a word, I will kiss him'

(303) An pi *kan* mia leksi, tha ton skotoso *Threat*
if say kan a word, will him kill
'If he even says a word, I will kill him'

(i) *Ipe *oute kan* mia leksi??
said oute kan a word
'Did (s)he even utter a word?'

In the current approach, example (i) is doomed independently, as an *ou*-element appears post-verbally in the absence of a negative licenser (see chapter 2), while the respective example with preverbal *oute* is predicted to be felicitous (ii), which is empirically verified.

(ii) *Oute kan* ipe mia leksi?
oute kan said a word
'Did (s)he even utter a word?'

(304) An pi *kan* mia leksi, tha ekplago *Neutral/causal*
if say kan a word, will surprise
'If he even says a word, I will be surprised'

In addition, questions containing minimizers are 'negatively biased', meaning that they convey that the speaker expects a negative answer (Borkin, 1971; Ladusaw, 1980). This is the case also with questions containing *even.* Such questions are similarly biased when the particle *even* associates with a constituent that denotes a minimal value. In (305) the speaker assumes that the person most probably hasn't texted.

(305) He didn't call. Did he *even* text you?

As shown in (306) negative bias is triggered by *kan* irrespective whether a negative licenser is present.

(306) Ipe *kan* mia leksi?
said kan one word
'Did (s)he even utter a word?'

Based on the above, it is natural to assume that the particle *kan* should be treated like a minimizer. Eckardt (2005) and Chierchia (2013) paraphrase minimizers such as *drink a drop* along the lines 'drinking an amount that does not count', marking the endpoint of a scale of drinking. Chierchia provides the entry in (307) for the minimizer *drink a drop*. In this way, *drink a drop* is a stronger alternative (307a), than the alternative (307b) (the lexical entry is based on Chierchia (ibid.) and adopted by Csipak (ibid.)). If someone is surprised that John drinks a drop, as he normally does not drink any alcohol, then it follows that (s)he will also be surprised if John drinks two beers; the sentence containing the minimizer is a stronger alternative as spelled out in (308). The speaker, when using a minimizer, chooses stronger alternative than if (s)he had used any other

alternative value on the scale in question (Krifka, 1995; Eckardt, 2005; Chierchia, 2013).

(307) a. $[[\text{drink a drop}]]^{w} = \lambda x \exists s[\text{drink}_{w}(s,x,d_{min})]$
b. ALT (drink a drop)= $\{\lambda x \exists s[\text{drink}(s,x,d') : d' > d_{min}]\}$

(308) John drinks a drop, I will be very surprised ⊆ If John drinks two beers at the party, I will be very surprised

In a similar manner, the associate of the particle *kan* in example (304) is the strongest alternative, compared to any other alternative, as shown in (309a). If I am surprised because a person utters a word, as (s)he normally remains silent, then it follows that I will also be surprised if this person talks for an hour. Similarly to (308), the sentence in (309) containing the minimizer is a stronger alternative than any one higher on the scale ((309b).

(309) a. If he utters a word, I will be very surprised ⊆
If he talks for an hour, I will be very surprised
b. Alternatives: {he utters a word, he talks for an hour, he talks for two hours…}

Hence the semantics proposed for the minimizer in (307) can also be adopted for the minimizer *kan* (310a). *Kan* requires its associate to denote the element possessing the relevant property to the minimum degree, as shown in (310b).

(310) a. $[[\text{x } kan]]^{w} = \lambda x \exists s[\text{utter}_{w}(s,x,d_{min})]$
where x stands for *leo mia lexi*/ 'utter a word'
b. ALT (utter a word)=$\{\lambda x \exists s[\text{utter a word } (s,x,d') : d' > d_{min}]\}$

I conclude that *kan* is a minimizer marking its associate as the endpoint of the pragmatic scale, similarly to other studied minimizers. *Kan* can co-occur with

oute₂, but it can also appear in environments in which regular minimizers are licensed triggering a negative bias (i.e. conditionals denoting threat (303) or a causal relationship (304) and questions (306)).

6.4 Properties of different manifestations of Greek *even*

After having presented and analyzed the properties of *oute₂* and *kan* I will proceed to the properties of the remaining particles employed by Greek to convey different aspects of the meaning of 'even', viz. *akomi ke/ mehri ke* and *esto (ke)*.

6.4.1 Differences between akomi ke and mehri ke

Starting with episodic sentences, there are two particles, namely *akomi ke* and *mehri ke*, which have, to the best of my knowledge, been considered identical in meaning (Giannakidou, 2007). In this section I will argue that there are some subtle differences that have gone unnoticed in the literature of these particles in Greek so far.

Differences in distribution

To begin with, the two particles *akomi ke* and *mehri ke* differ in the type of semantic objects they combine with. While the particle *mehri* has a locative nature, *akomi*[132] is a temporal modifier, presented in (311) and (312) respectively.

(311) Taxidepse *mehri*/**akomi* ti Rosia
travelled mehri/akomi the Russia
'(S)he travelled up to Russia'

[132] The particle *akoma/akomi* may also convey the meaning of 'yet'.
(i) Dhen ehi milisi *akoma/akomi*
NM has talked yet
'(S)he has not talked yet'

(312) Taxidevi **mehri*/ *akomi*
travels mehri/akomi
'(S)he is still travelling'

Both particles when combined with the particle *ke* give rise to the meaning of *even* in positive episodic sentences. *Anna*, the associate of *mehri ke* or *akomi ke* is considered the least likely person to have called in (313).

(313) *Mehri ke*/*akomi ke* i Anna tilefonise
mehri ke/akomi ke the Anna called
'Even Anna called'

However, the two particles are not identical in meaning, and show distinct syntactic properties. To begin with, when the associate of *mehri ke* is a spatial expression, it has to be a PP, in order for *mehri ke* to receive an *even* interpretation (realized as (314)). If the associate is a bare DP, then the particle conveys only a spatial meaning as in (315) and cannot express an *even* interpretation. *Mehri ke* in (315) only admits a spatial 'up to' meaning:

(314) Taxidepse *mehri ke* sto Peru
travelled mehri ke to.the Peru
'(S)he travelled even to Peru'/'#(S)he travelled up to Peru'

(315) Taxidepse *mehri ke* to Peru
travelled mehri ke the Peru
'#(S)he travelled even to Peru'/'(S)he travelled up to Peru'

The particle *akomi ke* also requires a PP in order to express an *EVEN* interpretation (316), similarly to *mehri ke.* The difference between the two elements is that *akomi ke* can never express a spatial interpretation, so it is

infelicitous when its associate is a bare DP, as seen in (317) (cf. *mehri ke* in (315)):

(316) Taxidepse *akomi ke* sto Peru
travelled akomi ke to.the Peru
'(S)he travelled even to Peru'

(317) * Taxidepse *akomi ke* to Peru
travelled akomi ke the Peru
'#(S)he travelled even to Peru/'#(S)he travelled up to Peru'

Another difference between the two particles, already observed by Giannakidou (2007), is that *mehri ke* cannot introduce CPs, as opposed to *akomi ke* which shows no such restriction, as illustrated in (318).

(318) **Mehri ke*/*akomi ke* an egrafe tin askisi, de tha pernuse
mehri ke/akomi ke if wrote the exercise, NM will pass to test
the test
'Even if (s)he had written the exercise, (s)he wouldn't pass the test'

There is an interesting additional complication though: the distribution is reversed when these elements appear with the complementizer *pu/*'one'. Surprisingly, in examples like (319) which includes the overt complementizer *pu/*'that' for relative and factive clauses (Roussou, 1994; Varlokosta, 1994) instead of the conditional complementizer *an/*'if', *mehri* is felicitous, while *akomi* is not.

Context: You meet a friend of yours with whom you had an argument. After the meeting I am asking you:

(319) A: How was the meeting?
B: It was great. He admitted his mistakes.
*Mehri ke/*akomi ke* pu mu zitise signomi!
mehri ke/ akomi ke that me asked sorry
'He even apologized!'

Even though this is a revealing contrast, unfortunately, I will have to remain agnostic as to what is the cause for the reversal documented in (318) and (319). I suspect that this difference might have to do with the locative nature of *pu* (it originates from the locative adverb *opu/'where'*) as opposed to the conditional nature of *an/*'if', which differentiates them with respect to their suitability to combine with the locative *mehri ke* and temporal-like *akomi ke*, respectively. In other words, there is probably an s-selection issue involved here having to do with the compatibility of different types of complementizers with locative vs. temporal-like particles. With these speculative remarks, I leave this issue open for further research and turn to the semantic differences between the two particles.

(i) Semantic differences

I will argue that *akomi ke* only optionally marks the endpoints of a scale, while *mehri ke* always has to refer to scale endpoints. To begin with, *akomi ke* is felicitous both when it marks endpoints, as in (320), but also in (321). In (321) it is implicitly assumed that it is less likely for someone to travel to Russia than to the Netherlands. If the two destinations are interpreted as part of the same trip then *akomi ke* does not mark the endpoint of the scale when the associate is *Olandia*/'the Netherlands'.

(example based on Schwenter & Vasishth, 2000)
(320) To pistevis? Efthase *akomi ke* stin Olandia!
clitic believe? Reached akomi ke to.the Netherlands
'Can you believe it? (S)he reached even the Netherlands'

(321) To pistevis? Efthase *akomi ke* stin Olandia ke
clitic believe? Reached akomi ke to.the Netherlands and
akomi ke sti Rosia
akomi ke to.the Russia
'Can you believe it? (S)he reached the Netherlands and even Russia'
Scale of likelihood assumed: reach the Netherlands < reach Russia

Turning to *mehri ke*, the particle always has to associate with an element that marks an endpoint, as the well formedness of (322) shows, and the marginality of example (323). Example (323) demonstrates that *mehri ke* always has to associate with an endpoint.

(322) To pistevis? Efthase *mehri ke* tin Olandia!
clitic believe? Reached mehri ke the Netherlands
'Can you believe it? (S)he reached even the Netherlands'

(323) To pistevis? *Efthase *mehri ke* tin Olandia ke
clitic believe? Reached mehri ke the Netherlands and *mehri ke* ti Rosia
mehri ke the Russia
'Can you believe it? (S)he reached even the Netherlands and even Russia'
Scale of likelihood assumed: reach Netherlands <reach Russia

In sum, although both particles *akomi ke* and *mehri ke* may convey the meaning of *even* in positive episodic sentences, only *akomi ke* is felicitous when the associate does not occupy the edge of the scale, as seen in (321), while *mehri ke* is marginal in such environments (323).

Further support for the above-menetioned difference is that once it is clear that the two events/entities are distinct in the scenario above, i.e. if two different trips have been accomplished, the particles *akomi ke* and *mehri ke* accordingly mark the endpoint of the pragmatic scale and both particles become felicitous, as illustrated in (324). Notice that in order to distinguish the two events the adverb *argotera,* meaning 'then/later' has been introduced in (324) indicating that the person visited the two destinations, the Netherlands and Russia, at two separate occasions. As a result, the particle *mehri ke* in both cases marks an endpoint. The fact that example (324) is well formed supports our claim that felicity depends on the nature of the associate, namely whether it is located at the endpoint of the scale or not.

(example based on Schwenter & Vasishth, 2000)

(324) To pistevis? Efthase *mehri ke* stin Olandia ke
clitic believe? reached mehri ke the to.Netherlands and
argotera *mehri ke* sti Rosia
then mehri ke to.the Russia
'Can you believe it? (S)he reached as far as Netherlands and then as far as Russia'

Another difference between the two particles concerns contextual dependency. Here, it is the particle *akomi ke* that is subject to additional restrictions. In the absence of a precise pragmatic scale *mehri ke* is felicitous, while *akomi ke* is licit only if a pragmatic scale is inferable. For example, if the sentence in (325) is uttered out of the blue, then there is no pragmatic scale. As a result, *akomi ke* is marginal, while *mehri ke* is felicitous (scenarios and examples based on Schwenter & Vasishth, 2000).

Scenario 1: Mother watching her child playing with a new toy. Nothing has been said about the toy. She utters:

(325) Afto to pehnidi ine ??*akomi ke/mehri ke* epikindino!
this the toy is akomi ke/mehri ke dangerous
'That toy is even dangerous!'

Once a pragmatic scale is available, then both particles are felicitous as shown in (326). The speaker considers it less likely for a toy to be dangerous than ugly, thus (s)he can use either *akomi ke* or *mehri ke*.

Scenario 2: Conversation between two parents about their child's new toy.

(326) A: That toy is ugly!
B: *Akomi ke*/*mehri ke* epikindino ine!
akomi ke/mehri ke dangerous is
'It is even dangerous!'
Possible scale assumed: ugly toy > dangerous toy

In sum, *akomi ke* and *mehri ke* are not interchangeable as has been assumed so far in the literature. *Akomi ke* optionally marks an endpoint, while *mehri ke* always does. In addition, *akomi ke* is licit as long as a pragmatic scale is contextually available, whereas *mehri ke* does not impose such a contextual requirement.

6.4.2 Spanish counterparts of '*even*' *in positive episodic sentences: the particles hasta and incluso*

Greek is not exceptional in using several different particles to express the meaning of *even*[133,134]. Similar facts have been reported for Spanish (Schwenter & Vasishth, 2000). Spanish uses two particles to convey the meaning of *even* in positive episodic sentences, *hasta* and *incluso*. These particles show similar restrictions as the Greek particles presented above. Example (327) demonstrates

133 A similar observation holds for Hindi particles for *even, –tek* and *–bhii* (Schwenter & Vasishth, ibid.).
134 Since English employs only one element in positive episodic sentences, namely *even*, there is no parallelism between Greek and English.

that Spanish *hasta* always marks scale endpoints, hence the ungrammaticality of (327), while this requirement is absent with Spanish *incluso* (examples adopted from Schwenter & Vasishth, ibid.).

(327) A: Did X come to your party?
B: No sólo X, *incluso*/*hasta* vino Y e *incluso*/ **hasta* Z
not only X, incluso/*hasta* came Y and incluso/hasta Z
'Not only did X come, but even Y and even Z'

Similarly to *mehri ke* in (324), the particle *hasta* becomes felicitous once the two events are considered distinct, as shown in (328). Note that the distinction between two events is triggered by the presence of the adverb Spanish *luego* in (328) (example adopted from Schwenter & Vasishth, 2000):

(328) Viajaron hasta Holanda y *(luego) *hasta* Rusia
travel hasta Netherlands and then even Russia
'They travelled even to Netherlands and then even to Russia'

Finally, the particle *incluso*, just like Greek *akomi ke*, *is* excluded if there is no active pragmatic list, while *hasta* is felicitous, as shown in (329).

Scenario 1: Mother watching her child playing with a new toy. Nothing has been said about the toy. And she utters:

(329) Ese juguete es *hasta*/ #*incluso* peligroso
hat toy is hasta/ incluso dangerous
'That toy is even dangerous!'

As soon as a pragmatic scale becomes available, then *incluso* also becomes felicitous, as illustrated in (330) (cf. (326) with *akomi ke*).

Scenario 2: Conversation between two parents about their child's new toy.

(330) A: Ese juguete es feo
that toy is ugly
'That toy is ugly!'
B: E *incluso* peligroso
and even dangerous
'And it is even dangerous!'

Vasishth and Schwenter (2000) who initially noticed the above-mentioned differences concluded that the lexical distinction between *hasta* and *incluso* reflects a difference in the marking of a scale, and thus the particles should be separated into two categories (Vasishth, 1998; Schwenter, 1999, 2000). Spanish *hasta* marks scale endpoints and is called an 'absolute' particle, while Spanish *incluso* which optionally mark endpoints, is a 'relative' particle. I have shown that *akomi ke* and *mehri ke* show exactly the same subtle differences associated with Spansih *hasta* and *incluso.* Following Schwenter's (1999, 2000) and Schwenter & Vasishth's (2000) distinction, I argue that *mehri ke* is an *absolute* particle, always marking an endpoint, while *akomi ke* is a *relative* one.[135] I will leave a formal semantic analysis of these facts for future work, and will now turn to the properties of the last particle employed for *EVEN*, viz. *esto (ke).*

6.5 The particle *esto (ke) 'at least'*

Esto originates from the third person singular of the imperative form of the verb 'be*'* in Ancient Greek. Similarly to the rest particles employed for Greek EVEN (i.e. *akoma/akomi* and *mehri*)[136] it is followed by the additive particle *ke/*'and' (Giannakidou, 2007).[137] Contrary to *mehri* and *akoma/ akomi* which must be

135 The authors do not provide a semantic analysis distinguishing *absolute* from *relative* particles marking endpoints.
136 Recall that *oute* also contains the affix *-te* which is an additive particle meaning 'and' originating from Ancient Greek.
137 Interestingly, Romanian also has a distinct concessive particle *(fie și*), which can be used in the same environments as *esto* (*ke*) and differs from the concessive particle (*at least*) (Iordăchioaia, p.c.). Furthermore, it also shares the same morphological properties. The particle

followed by *ke* in order to give rise to the meaning of *even*, the presence of the particle *ke* is optional with *esto*, as shown in (331).

(331) Lise *esto* (*ke*) MÍA askisi
solve esto ke one exercise
'Solve at least one exercise'

Just like all the other particles, the particle *esto* (*ke*) has to precede its associate and be adjacent to it ((331) vs. (332)).

(332) *Lise mia askisi *esto* (*ke*)[138]

The main stress falls on the associate DP (333) (see appendix III for experimental data confirming this claim).

(333) Lise *esto* (*ke*) MÍA askisi

Regarding its distribution, *esto* (*ke*)[139] may occur in the scope of non-negative desire predicates (i.e. *hope*, *wish*, *would like*) as shown in (334), (335) and (336), respectively. In addition, it is licit in the scope of factive desire predicates (i.e. *be glad*), presented in (337) and in imperatives[140,] as shown in (338). The

fie și is composed by the second person of the imperative of the verb to be (*fie*) followed by the additive 'and' (*și*), similarly to Greek.

138 In the next chapter I will claim that *esto* (*ke)* should be distinguished from *esto* which can never associate with *ke.* The current discussion concerns *esto* that can be optionally followed by the particle *ke*.

139 *Esto* (*ke*) shares the same properties with what Crnič (2011) has called weak *even*/concessive *even.* It is similar to Slovenian *magari* (Crnič, ibid.), Spanish *aunque sea* (Lahiri, 2008) and German *auch nur* (Guerzoni, 2003).

140 Giannakidou (2007) does not distinguish *esto* (*ke*) from *esto* (**ke*) and claims that *esto* is banned in the scope of a negative marker. I argue this is the case for *esto* (*ke*)*,* but not for *esto* (**ke*) as the grammaticality of (i) suggests:

(i) Dhe diavase *esto* (**ke*) tin isagogi
NM read esto ke the introduction
'(S)he didn't even read the introduction'

particle *esto ke* is banned in the scope of episodic predicates (339). Note that in all these cases the particle *ke* is optional:

(334) Elpizo na djavasi *esto* (*ke*) mia selida
hope to read esto ke one page
'I hope (s)he reads even one page'

(335) Efhome na djavasi *esto* (*ke)* mia selida
hope to read esto ke one page
'I wish (s)he read even one page'

(336) Tha ithela na djavasi *esto* (*ke*) mia selida
will like to read esto ke one page
'I would like him/her to read even one page'

(337) Harika pu djavase *esto* (*ke*) mia selida
was.glad that read esto ke one page
'I was glad that (s)he read even one page'

(338) Djavase *esto* (*ke*) mia selida!
read esto ke one page
'Read even one page!'

(339) *Xthes diavase *esto* (*ke*) mia selida
yesterday read esto ke one page
'Yesterday, (s)he read even one page'

Esto (*ke)* is also felicitous in downward entailing (DE) environments, specifically in the restrictor of the universal quantifier (340), in the antecedent clause of a conditional (Giannakidou, 2007), as shown in (341), under the scope of *without* (342) and under the verb *doubt* (343):

(340) Kathe fititis pu elise *esto* (*ke*) mia askisi, perase
every student that solved esto ke one exercise passed
tis eksetasis
the exams
'Every student who solved even one exercise
passed the exams'

(341) Ean lisis *esto* (*ke)* mia askisi, tha perasis tis eksetasis
if solve esto (ke) one exercise will pass the exams
'If you solve even one exercise, you will pass the
exams'

(342) O Nikos teliose ti sholiki hronia choris na lisi *esto*
the Nikos finished the school year without to solve esto
(*ke*)[141] mia askisi
ke one exercise
'Nikos finished the school year without even solving
one exercise'

(343) O Petros amfivali *oti/an* i Anna tha lisi *esto*
the Petros doubts that/whether the Anna will solve esto
(*ke*) mia askisi
ke one exercise
'Petros doubts that Anna will solve even one exercise'

The associate of this particle is interpreted as the *least likely* element of the scale. What is viewed as necessary in order to get a passport in example (344) is to send a scanned photo, anything beyond this cannot satisfy the condition for getting a passport:

141 The native speakers I have consulted with tend to prefer the omission of *ke* in this example. As I was told, this is a tendency, and it is not the case that the particle *ke* is not licensed in this example.

(examples based on Crnič, 2011)

(344) Jia na vgalis djavatirio, prepi na mu stilis *esto* (*ke)*
for to get passport must to me send esto (ke)
mia skanarismeni fotojrafia
a scanned photo
'To get a passport, you must send me at least a scanned photo'
Scale assumed: scanned photo> original photo

In the next chapter, I will propose that *esto* (*ke*) should be distinguished from the bare form *esto* which can never associate with *ke.*

Summarizing the discussion in this chapter, I started by arguing that the particle *oute*$_1$ is an anaphoric element that should be analyzed as the negative counterpart of *too.* Then, I turned to *oute*$_2$ which conveys the meaning of *even* in DE environments. Extending the discussion to the other Greek particles expressing EVEN (i.e. *akomi ke, kan*) I proposed that despite the fact that these elements are tied to a certain interpretation, this fact does not necessarily support a lexical analysis of *EVEN*. The two facts that (i) in certain syntactic environments different elements convey the same meaning and that (ii) the syntactic position of an element (i.e *akomi ke*) determines its interpretation provides evidence in support of a scope analysis of *EVEN.* In addition, I showed that *kan* should be treated as a minimizer. Finally, I argued that the particles *akomi ke* and *mehri ke*, which have so far been considered synonymous in positive episodic sentences show restrictions similar to their Spanish counterparts. These restrictions were related to the different ontological status of the entities these particles associate with (*akomi* combines with a temporal entity, while *mehri* with a spatial one). Finally, I have addressed the syntactic distribution of *esto* (*ke*). Although I have provided broader empirical generalizations, regarding the Greek particles expressing EVEN, I have left open how some of the subtle differences and properties characterizing these elements can be accounted for.

Chapter 7

Exploring concession and epistemicity

In this final chapter I will focus on the concessive particles *esto* and *tulachiston.* Taking *esto* as a departure point, I will argue that there are two uses of the particle, one conveying the meaning of *even* in downward entailing environments, already presented in section 6.5, and another one roughly synonymous to concessive *at least.* I will first present the syntactic and semantic differences and commonalities between these two readings. Then, the discussion will extend to another element which may also convey a concessive meaning, the particle *tulachiston.* I will explore the question of how *esto* relates to *tulachiston* and provide an analysis for these concessive elements.

As will be seen, the particle *tulachiston*, apart from imposing a concessive interpretation, may also induce an ignorance effect, the so-called epistemic interpretation of *at least* (Nakanishi & Rullmann, 2009a). I will present the properties of epistemic *tulachiston* and provide evidence that this reading must be distinguished from its concessive meaning. Next, the discussion will be extended to another particle that receives the meaning of *at least*, namely the particle *to ligotero*. After a discussion of the syntactic, semantic, phonological commonalities and differences between the two Greek particles corresponding to English epistemic *at least,* I will address the question whether there is a connection between epistemicity and concessivity in the interpretation of *at least*. This question is of relevance because several languages among them Greek, English, Chinese, German systematically employ the same particle in order to convey the two meanings. It is also important to note that these particles have superlative morphology. This will lead me to investigate two prominent current theories of superlatives that could be used in the analysis of these elements, Nouwen (2010) and Bobaljik (2012). Although differing in their scope and details, I will argue that both theories provide new insights concerning the mapping between the morphology of superlative modifiers and their semantics.

7.1 Distinguishing concessive *esto* (**ke*) 'at least' from *esto* (*ke*) 'even'

As already anticipated, I will begin by providing evidence that there are two manifestations of *esto* which, although related in several ways, show subtle semantic, syntactic and prosodic differences.

(i) Interpretation

We have already seen in the previous chapter that *esto (ke*) associates with the least preferred element on a pragmatic scale. In scenario 1, the speaker in (345) considers solving one exercise the least preferred element on the scale.[142] Notice that the associate of *esto* (*ke*) is glossed with the meaning of *even.*

Scenario 1: Anna is lazy and never does her homework. Anna has to solve seven exercises for her course tomorrow. Anna's mother says to Anna:

(345) Lise *esto* (*ke)*[143] MÍA askisi
solve esto ke one exercise
'Solve even one exercise'

(346) Pragmatic scale
Solve one exercise < solve two exercises <….< solve seven exercises
the symbol "<" is interpreted as 'less preferable than'

The particle *esto* (*ke*) cannot associate with an element that is not considered the least preferred element on the scale. Example (347) is deviant in scenario 1. It would be felicitous only in a different scenario in which solving five exercises would be considered the least preferred alternative.

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142 One could argue that the scale could also include the alternative that Anna *solves no exercises*, as in (i). In this case the associate of *esto (ke)* does not stand at the top end of the scale; however, in our scenario, in (345), solving one exercise is considered the least preferred alternative, as solving no exercises is considered a non-preferred alternative and is not included in the scale.

(i) solve no exercises < solve one exercise < solve two exercises <…< solve seven exercises

143 Recall that the additive particle *ke* is present in all particles that convey the meaning of *even*, i.e. *akomi ke, mehri ke* and *oute* (*-te* was an additive suffix in ancient Greek).

(347) #Lise *esto* (*ke)* pede askisis (# in scenario 1)
solve esto ke five exercises
'Solve even five exercises'

This means that *esto* (*ke*) cannot associate with the most preferred element on the pragmatic scale either, as shown in (348):

(348) #Lise *esto* (*ke)* efta askisis (# in scenario 1)
solve esto ke seven exercises
'Solve even seven exercises'

Turning to *esto* which bans the presence of *ke*, it can be shown that *esto* (**ke*) does not associate with the least optimal alternative on the scale. Take as an example scenario 2 and the pragmatic scale in (350).

Scenario 2: I am a teacher and my students took an exam which consisted of several exercises. In order to pass the test, students need to solve at least four exercises. Solving fewer than five exercises is considered unsatisfactory, while solving seven is the optimal. I thought my student Anna would do well at the exam. Anna managed to solve five exercises. In this scenario I can utter:

(349) Elise *esto* (**ke*) pede askisis
solved esto ke five exercises
'At least, she solved five exercises'

Pragmatic scale

(350) solve one exercise < solve two exercises < ....< solve seven exercises

In this scenario, the fact that Anna solved five exercises is considered to be satisfactory, it is neither the worst, nor the optimal outcome. The concession of

the speaker is expressed by the particle *esto* (**ke*), as illustrated in (349), glossed as 'at least' (cf. *esto* (*ke*) in which is glossed as 'even' in (345)).

As opposed to *esto* (*ke*) in (345), the associate of the particle *esto* (**ke*) cannot be the least preferred element on the scale (351).

(351) #Elise *esto* (**ke*) mia askisi (# in scenario 2)
solved esto ke one exercise
'At least, she solved one exercise'

Esto (**ke*) shares the same property with *esto* (*ke*) since neither can associate with the most preferred element on the scale (352) (cf. (348)).

(352) #Elise *esto* (**ke*) efta askisis (# in scenario 2)
solved esto ke seven exercises
'At least, she solved seven exercises'

(ii) Prosody

A second difference concerns prosody. The particle *esto* (*ke*) behaves as a regular focus particle whose associate bears prominent stress. As documented in (353a), it is the associate DP that bears prominent stress and not the verb (353b).

(353) a. Prospathise na lisis *esto* (*ke*) MÍA askisi
try to solve esto ke one exercise
'Try solve even one exercise'
b. #Prospathise na LISIS *esto* (*ke*) mia askisi
try to solve esto ke one exercise
'Try solve even one exercise'

By contrast, the main stress of a sentence with concessive *esto* (**ke*) falls on the verb (354a),[144] and the DP cannot bear prominent stress (354b). The fact that

144 There also seems to be secondary stress on the particle; importantly for our purposes, main stress falls on the predicate. See in appendix III the spectrograms for concessive *esto*.

the verb must be prominent indicates that *esto* (**ke*) marks verum focus (Höhle, 1992). Verum focus adds to the assertive meaning that there is a contextually salient alternative with reverse polarity. In the case at hand, verum focus on the verb signals an alternative who has not managed to solve five exercises.

(354) a. ÉLISE *esto* (**ke*) pede askisis
solved esto ke five exercises
'At least, she solved five exercises'
b. #Elise *esto* (**ke*) PÉDE askisis
solved esto ke five exercises
'At least, she solved five exercises'

(iii) licensing of the particle ke

The third difference between the two versions of *esto* concerns the distribution of the particle *ke.* In one instance, the particle *esto* is optionally followed by the additive particle *ke*, (repeated in (355)), while in the second instance the particle *ke* is disallowed (repeated in (356)):

(355) Lise *esto* (*ke*) MÍA askisi
solve esto ke one exercise
'Solve even one exercise'

(356) ÉLISE *esto* (**ke*) pede askisis[145]
solved esto ke five exercises
'At least, she solved five exercises'

(iv) Syntactic distribution

As we have seen in section 6.5, *esto* (*ke*) when conveying the meaning of *even,* appears only in downward entailing contexts (cf. (345) above). It is infelicitous in positive episodic sentences like (357).

145 Giannakidou (2007) considers *esto* in positive episodic sentences ungrammatical obviously referring to *esto* (*ke*) and not to *esto* (**ke*).

(357) *Elise *esto ke* pede askisis
solved esto ke five exercises
'She solved even five exercises'

On the other hand, *esto* (**ke*) shows no such restriction and can appear both in downward entailing contexts (358) and in positive episodic sentences (359):

(358) LISE *esto* (*ke) pede askisis
solve esto ke five exercises
'At least, solve five exercises'

(359) ÉLISE *esto* (**ke*) pede askisis
solved esto ke five exercises
'At least, she solved five exercises'

(v) Word order

The particle *esto* (*ke*) on its *even* meaning precedes the element it modifies, as shown in (360). It cannot follow the associate constituent (361).

(360) Lise *esto* (*ke*) mia askisi
solve esto ke one exercise
'Solve even one exercise'

(361) *Lise mia askisi *esto* (*ke*)
solve one exercise esto ke
'Solve even one exercise'

On the other hand, *esto* (**ke*) is limited in its syntactic distribution. The neutral position for the particle is after the verb or following the complement[146], as in (362).

146 I use the symbol ' < > ' to show the potentially available syntactic positions for the particle *esto*.

(362) ÉLISE <*esto (*ke)*> pede askisis <*esto* (**ke*)>

The particle *esto* (**ke*) can also modify a DP, in which case it triggers a contrastive reading. Notice that there is an intonational gap after *esto.*

(363) I Anna *esto* (**ke*), ÉLISE pede askisis
the Anna esto ke solved five exercises
'Anna at least, solved five exercises'

(vi) Implicatures: compatibility with false higher scales

Another piece of evidence in support of a non-uniform treatment of these elements concerns their implicatures. The particle *esto* (*ke*) is infelicitous in positive episodic sentences, hence it is disallowed in examples such as (364) (based on Nakanishi and Rullmann (2009a):

(364) *Dhen elise efta askis, ala elise *esto ke* pede
NM solved seven exercises but solved esto ke five
'She did not solve seven exercises, but she solved even five'

On the other hand, the *ke*-less variant of *esto* can appear in contexts in which a higher element of the scale is explicitly excluded, as in (365).

(365) Den elise efta askisis, ala ÉLISE *esto* (**ke*) pede
NM solved seven exercises, but solved esto ke five
'She did not solve seven exercises, but, at least, she solved five'

Notice that the English counterparts of these examples would also use different particles. When a higher element of the scale is explicitly excluded the use of *even* is banned, and the particle *at least* is used instead, as illustrated in example (366) (example from Nakanishi & Rullmann, ibid.).

(366) Anna didn't solve seven exercises, but she *at least/ *even* solved five

The fact that *esto* is glossed in certain cases as *even* and in others as *at least*, provides a key to the present treatment of the two occurrences of *esto.* I would like to propose that *esto* (*ke*) corresponds to English *even,* while *esto* (**ke*) corresponds to English *at least*. However, in contrast to what is suggested by the above differences*, esto* (*ke*) and *esto* (**ke*) also have some properties in common.

(i) Preferability for higher alternatives on the scale

Both elements trigger the implicature that there is preference for higher elements on the scale. This means that neither element can associate with the top element of the pragmatic scale. Recall that the scale in our examples so far is as the one in (367); solving seven exercises is considered the optimal achievement.

(367) *Pragmatic Scale*: one exercise < two exercises <...< five exercises < ...< seven exercises

The example with *esto* (*ke*) in (368) implicates that a higher alternative in the scale would have been preferable, but even solving five is considered sufficient.

(368) I Anna dhe tha lisi efta askisis, ala efhome na
the Anna NM will solve seven exercises, but wish to
lisi *esto* (*ke*) pede
solve esto ke five
'Anna will not solve seven exercises, but I hope she solves even five'

The same holds for *esto* (**ke*). Example (369) entails that it would have been preferable if Anna had solved seven exercises. In this respect, *esto* (**ke*) and

esto (*ke*) behave alike: both indicate a preference for a higher element on the scale.

(369) I Anna den elise efta askisis, ala ÉLISE *esto* (**ke*)
the Anna NM solved seven exercises, but solved esto ke pede
five
'Anna did not solve seven exercises, but at least she solved five'

A similar preference is triggered by the English particles *at least* and *even.* The corresponding English example with *even* in (370) induces a similar preference for higher alternatives, as *esto* (*ke*) in example (368):

(370) Anna will not solve seven exercises, but I hope she solves *even* five

Similarly, in (371), from Nakanishi & Rullmann (ibid.), the fact that Anna solved five exercises is satisfactory, but is not viewed as the most preferred element on the scale.

(371) Anna didn't solve seven exercises, but, *at least*, she solved five

(ii) 'Settling for less' interpretation

Second, both *esto* (*ke*) and *esto* (**ke*) convey the 'settling for less' meaning, providing evidence that both are concessive elements. The concessive meaning implicates that there is a higher alternative which is preferred. The associate of *esto* is satisfactory, but not the optimal alternative. In other words, the associate cannot be the most preferred element on the pragmatic scale (otherwise the 'settling for less' interpretation would be nonsensical). In our scenario, solving seven exercises would be the best scenario. *Esto* (*ke*) in (372) and *esto* (**ke*) in

(373) are infelicitous, due to the fact that both elements induce the 'settling for less' interpretation which is incompatible with the fact that Anna solved seven exercises (the most preferred alternative on the relevant scale). This fact supports the view that despite subtle differences, they are both concessive elements.

(372) #Efhome i Anna na lisi *esto* (*ke*) EFTA askisis
wish the Anna to solve esto ke seven exercises
'#I wish Anna solved even seven exercises'

(373) #I Anna ELISE *esto* (**ke*) efta askisis
the Anna solved esto ke seven exercises
'#At least, Anna solved seven exercises'

The counterpart English examples in (374) and (375) with the particles *even* and *at least* respectively also trigger a 'settling for less' effect. Since solving seven exercises is regarded the optimal achievement, the concessive particle *even* is infelicitous when its associate is the most preferred element as in (374). The same holds with *at least* in example (375). As in the case of the above Greek examples, the pragmatic inference of the particles contradicts the inference induced by the associate, which is the top element on the scale, resulting in infelicity.

(374) #I wish Anna solved *even* seven exercises

(375) #*At least*, Anna solved seven exercises

In sum, Greek concessive elements *esto* (*ke*) and *esto* (**ke*) behave alike with respect to their concessive meaning (cf. 'preferability for higher alternatives' and the 'settling for less' interpretation), but differ with respect to the interpretation of their associate element, prosody, licensing of the particle *ke*, syntactic distribution, word order and implicatures. These differences have gone

to my knowledge unnoticed in the literature so far. Table 9 summarizes the differences and similarities between *esto* (*ke*) and *esto* (**ke*).

Table 9: Differences and similarities between the particles *esto (ke)* and *esto (*ke)*

Differences	***Esto (ke)***	***Esto (*ke)***
Interpretation	*Even* (least preferred element on the pragmatic scale)	*At least* (neither the least, nor the most preferred element on the pragmatic scale)
Licensing of the particle ke	optional	Banned
Syntactic distribution	only in downward entailing contexts	positive episodic sentences and downward entailing contexts
Word order	Preceding its associate	Following its associate
Prosody	On the DP	On the verb (verum focus)
Implicatures: compatibility with false higher scales	No	Yes
Similarities		
Preferability for higher alternatives on the scale	Yes	Yes
Settling for less interpretation	Yes	Yes

7.2 A further instance of concessive *at least* in Greek: the particle *tulachiston*

Interestingly, there is another particle apart from *esto* (**ke*), which may also convey the same concessive meaning, the particle *tulachiston*. In this section I set out to demonstrate that *tulachiston* and *esto* (**ke*) share the same properties.

(i) Interpretation

The particle *tulachiston* behaves similarly to *esto* (**ke*)[147] in the scenarios discussed above, repeated below for convenience. The associate of *tulachiston* is considered to be a sufficient, but neither the optimal, nor the worst alternative.

Scenario 2: I am a teacher and my students took an exam which consisted of seven exercises. In order to pass the test, students need to solve at least four exercises. Solving fewer than five exercises is considered unsatisfactory, while solving seven results in the optimal score. I thought my student Anna would do well at the exam. Anna managed to solve five exercises. In this scenario I can utter (376), inducing the pragmatic scale in (377):

(376) Speaker A: ÉLISE *tulachiston/esto* (**ke*) pede askisis
solved tulachiston/esto ke five exercises
'At least, she solved five exercises'

(377) *Pragmatic scale*: Solve one exercise < solve two exercises <….< solve seven exercises

Due to the presence of *tulachiston*, the fact that Anna managed to solve five exercises is evaluated as being sufficient, though not optimal; it is neither the worst, nor the best outcome, hence the concessive meaning. Similarly to *esto* (**ke*) above, the associate of the particle *tulachiston* cannot express either the least (378) or the most preferred (379) element on the scale.

147 I have included in all examples *esto* (**ke*) in order to make explicit the commonalities and differences with *tulachiston*.

(378) #ÉLISE *tulachiston/esto* (**ke*) mia askisi[148]
solved tulachiston/esto ke one exercise
'#At least, she solved one exercise'

(379) #ÉLISE *tulachiston/esto* (**ke*) efta askisis
solved tulachiston/*esto ke* seven exercises
'#At least, she solved seven exercises'

(ii) Prosody

Similarly to *esto* (**ke*), prominent phonological focus does not fall on the particle (380), but on the predicate (381)[149]. The fact that the verb must bear prominent stress indicates that *tulachiston,* as well as *esto* (**ke*), mark verum focus (Höhle, 1992).

(380) #Elise TULACHISTON pede askisis[150]
solved tulachiston five exercises
'#At least, (s)he solved five exercises'

(381) ÉLISE *tulachiston/esto* (**ke*) pede askisis
solved tulachiston/esto ke five exercises
'At least, (s)he solved five exercises'

(iii) licensing of the particle ke

As illustrated in (382), *tulachiston* similarly to *esto*, bans the particle *ke*:

(382) ÉLISE *tulachiston* (**ke*)/*esto* (**ke*) pede askisis
solved tulachiston ke/esto ke five exercises
'At least, she solved five exercises'

148 Examples (378) and (379) are considered marginal in scenario 2.
149 See the spectrogram for *tulachiston* in Appendix III.
150 The sentence is felicitous with an epistemic meaning, namely 'She solved at least/more than five exercises", but this is not the interpretation we are interested in.

(iv) Syntactic distribution

Tulachiston may appear both in downward entailing contexts (383) and positive episodic sentences (384), similarly to *esto* (**ke*) (cf. (358) and (359) respectively):

(383) LISE *tulachiston/esto* (**ke*) pede askisis
solve tulachiston/esto ke five exercises
'At least, solve five exercises'

(384) ÉLISE *tulachiston/esto* (**ke*) pede askisis
solved tulachiston/esto ke five exercises
'At least, she solved five exercises'

(v) Word order

The first difference to be noted between *tulachiston* and *esto* (**ke*) concerns their distribution. Both *tulachiston* and *esto* (**ke*) can appear post verbally and in a sentence final position, as shown in (385). However, *tulachiston* is more flexible in that it can, unlike *esto* (**ke*), also appear preverbally (385) and sentence initially (386):

(385) <*Tulachiston/#esto* (**ke*)> elise <*tulachiston/esto* (**ke*)>
tulachiston/esto ke solved tulachiston/esto ke
pede askisis <*tulachiston/esto* (**ke*)>
five exercises tulachiston/esto ke
'At least, she solved five exercises'

(386) *Tulachiston/#esto* (**ke*) i Anna elise pede askisis
tulachiston/esto ke the Anna solved five exercises
'At least, Anna solved five exercises'

In addition, *tulachiston*, just like *esto* (**k*e), can also modify a DP which results in a contrastive reading. Notice that there is an intonational gap after the particle in example (387):[151]

(387) I Anna *tulachiston*/*esto* (**ke*), elise pede askisis
the Anna tulachiston/esto ke solved five exercises
'Anna at least, solved five exercises'

(vi) Implicatures: compatibility with false higher scales

Another piece of evidence in support of common treatment of these elements concerns their implicatures. Both *tulachiston* and *esto* (**ke*) appear in contexts in which a higher element of the scale is explicitly denied, as in (388) (based on Nakanishi and Rullmann, 2009a).

(388) Den elise efta askisis, ala ÉLISE *tulachiston/*
NM solved seven exercises, but solved tulachiston/
esto (**ke*) pede
esto ke five
'She did not solve seven exercises, but at least she solved five'

(vii) Preferability for higher alternatives on the scale

In addition, both elements trigger the implicature that there is preference for elements that are higher in the scale. This means that neither particle may associate with the top element on the pragmatic scale. Recall that in our example the scale induced is the one in (389); solving seven exercises counts as the optimal result in the exam.

151 See also in appendix III the spectrogram of concessive *tulachiston*.

(389) *Scale of preference*
one exercise < two exercises <... < five exercises < ...< seven exercises

Example (390) entails that it would have been preferable if Anna had solved seven exercises. Again, we see that *tulachiston* and *esto* (**ke*) behave alike in this respect: both indicate a preference for a higher element on the scale.

(390) I Anna den elise efta askisis, ala ÉLISE
the Anna not solved seven exercises, but solved
tulachiston/esto (**ke*) pede
tulachiston/esto ke five
'Anna did not solve seven exercises, but at least she solved five'

(viii) 'Settling for less' interpretation

Finally, both *tulachiston* and *esto* (**ke*) convey the 'settling for less' meaning, providing evidence that both are concessive elements. The fact that *tulachiston* and *esto* (**ke*) in (391) are both infelicitous suggests that both induce the 'settling for less' interpretation which is incompatible with Anna having solved seven exercises (the most preferred alternative on the relevant scale).

(391) #I Anna ÉLISE *tulachiston/esto* (**ke*) efta askisis
the Anna solved tulachiston/esto ke seven exercises
'#At least, Anna solved seven exercises'

The properties of the two concessive particles corresponding to *at least*, *esto* (**ke*) and *tulachiston,* are summarized in Table 10. The table demonstrates that the only difference between the two particles is that *tulachiston* exhibits a freer syntactic distribution than *esto (*ke)*. Thus, the semantic analysis that will be proposed for *esto* (**ke*) also applies to concessive particle *tulachiston*.

Table 10: Properties of the Greek concessive particles *tulachiston* and *esto* (**ke*)

Properties	***Tulachiston***	***Esto* (*ke)**
Interpretation	*At least* (neither the least, nor the most preferred element)	*At least* (neither the least, nor the most preferred element)
Licensing of '*ke*'	banned	banned
Syntactic distribution	Positive episodic sentences & DE contexts	Positive episodic sentences & DE contexts
Word order	Following/ preceding its associate	Following its associate
Prosody	On the verb/ verum focus	On the verb/ verum focus
Compatibility with false higher scales	Yes	Yes
Preferability for higher alternatives on the scale	Yes	Yes
'Settling for less' Interpretation	Yes	Yes

7.2.1 Esto (**ke*) *and tulachiston in optative constructions*

Before closing the presentation of concessive elements, I would like to briefly consider optative constructions because they provide independent support for the view that there are some fine distinctions in the semantics and distribution of *esto* (*ke*), as opposed to *esto* (**ke*), as well as for a common treatment of concessive *esto* (**ke*) and *tulachiston*.

Optative constructions express a wish without containing an overt lexical item introducing bouletic (wish) alternatives, desires or hopes (Quirk et al., 1972; Rosengren, 1993; Rifkin, 2000; Biezma, 2011; Grosz, 2011a, 2011b). In English, this type of optative interpretation arises if particles such as *only, just, but* are embedded in the antecedent of conditionals (392)-(394).

(392) If he had *only* studied more for the exam!

(393) If he could *but* study for the exam!

(394) If he could *just* study for the exam!

In several languages, among them Greek, there is no distinct particle specifically associated with optative constructions. In Greek, for example, rather a particle with the meaning of *at least* is employed, *tulachiston* (Kyriakaki, 2007, 2008, 2009). Following Nakanishi & Rullmann's analysis, Grosz (2011a) argues that this type of *at least* is concessive *at least*. According to Grosz, optative *at least* reflects a bouletic ranking, similarly to concessive *at least*, marking its associate neither as the optimal, nor as the worst alternative. In the scenario and examples below adopted from Villalta (2007) and Grosz (ibid.), the bouletic scale in (395) is formed.

Scenario 3: Sofia promised to bring dessert to my picnic, but I forgot to tell her my preferences. My favorite dessert is chocolate cake; apple pie is acceptable but less preferable; I hate vanilla ice cream. Sofia ended up bringing vanilla ice cream.

(395) Bouletic scale: vanilla ice cream < apple pie < chocolate cake
the symbol "<" stands for the 'less preferable than'

As seen in example (396), optative *tulachiston* is associated with an element that is neither the optimal (the chocolate cake), nor the worst alternative (the vanilla ice-cream). The speaker in (396) would be satisfied if Sofia had brought an apple pie, which is not the optimal option, but it is better than the vanilla ice cream which (s)he dislikes most.

(396) An ihe feri *tulachiston* milopita!
if had brought tulachiston apple pie
'If only she had brought an apple pie!'

The same observation holds for scenario 4 below which minimally differs from scenario 3 in that Anna has now solved just one exercise which counts as insufficient to pass the test.

Scenario 4: I am a teacher and my students took an exam which consisted of several exercises. In order to pass the test, students need to solve at least four exercises. Solving fewer than five exercises is considered unsatisfactory, while solving seven results in the optimal score. I thought my student Anna would do well at the exam. Anna managed to solve only one exercise. In this scenario I can utter:

(397) a. An ihe lisi *tulachiston* pede askisis!
if had solved tulachiston five exercises
'If only she had solved five exercises!'
b. Bouletic scale: solving one exercise <...< solving five exercises <...< solving seven exercises

The speaker in (397) says that if Anna had solved five exercises, that would be valued as satisfactory, though not the optimal alternative. The use of the particle *tulachiston* is accordingly legitimized. If I am correct in the way of characterizing the distinction between *esto* (**ke*) and *esto* (*ke*), and if Grosz is right that the concessive particle *at least* participates in optative constructions,[152] then only *esto* (**ke*) is expected to participate in optatives, while *esto* (*ke)* should be infelicitous.[153] This prediction is indeed borne out, as shown in (398). Concessive *esto* (**ke*), which has the semantics of *tulachiston,* can occur in the optative example.

152 Grosz only refers to concessive *at least* that Nakanishi & Rullmann (ibid.) talk about and not about *at least* that appears in downward entailment environments and interchanges with *even.*
153 Recall that *esto* (*ke)* associates with the least preferred element on the scale, while *esto* (**ke*) with an element that is neither the most preferred nor the least element on the scale.

(398) An ihe lisi *esto* (**ke*) pede askisis!
if had solved esto ke five exercises
'If only she had solved five exercises'

By contrast, *esto* followed by *ke* is strongly dispreferred in the scenario above. The reason for the oddity of (399) is due to the presence of *ke*; though satisfactory, solving five exercises is now regarded to be the least desirable option on the scale, and this entailment contradicts our scenario.

(399) ?An ihe lisi *esto ke* pede askisis! (? in scenario 4)
if had solved esto ke five exercises
'If only she had solved five exercises'

Moreover, if *esto ke* is associated with the least preferred element, as in (400), the sentence is still infelicitous (cf. (399)).

(400) #An ihe lisi *esto ke* mia askisi! (# in scenario 4)
if had solved esto ke one exercise
'If only she had solved one exercise'

In sum, optative constructions provide evidence that *esto* (**ke*) shares the same properties with concessive *tulachiston.* Both elements can freely be interchanged in optative constructions given that their associate is considered neither the least, nor the most preferred element on the assumed pragmatic scale. On the other hand, *esto* (*ke*) is highly marked because it picks out the least desirable alternative on the scale.

7.3 Extending the analysis of concessive English *at least* to Greek *esto* (**ke*) and *tulachiston*

At least has been argued in the literature to be truth-conditionally vacuous, i.e. the proposition modified by *at least* is truth-conditionally equal to the

proposition without the particle, as shown in (401) (Nakanishi & Rullmann, 2009a).

(401) ||at least Anna solved five exercises|| = ||Anna solved five exercises||

Concessive *at least* asserts that the target proposition p is true. In addition, *at least* induces a set of ordered alternatives on a scale reflecting a preference ranking as shown in (402a) (Nakanishi & Rullmann, 2009a). More precisely, it asserts that there is an alternative proposition q in the set of alternatives C which ranks higher (402b), and another proposition r which ranks lower than the associate of the particle as shown in (402c):[154]

(402) a.∀p, q∈C [q>p⇔q is preferred to p]
the scalar ranking reflects a preference ranking/a bouletic ordering
b. ∃q∈C [q>p]
there is a proposition q that ranks higher than p
c. ∃r∈C [r<p]
there is a proposition r that ranks lower than p

In the scenario above, solving five or more exercises (the alternative q) is preferred to solving five exercises (the target proposition p), as illustrated in (403). However, solving fewer than five exercises (the alternative r), is considered even less satisfactory. The associate of concessive *at least* is neither

154 Along the same lines, Grosz (2011b) proposes the following semantics for concessive *at least*:

(i) a. ||AT LEAST (concessive)||g,c = λS.λC.λp :
b. S is a bouletic ordering ∧ BOULETIC
c. ∃r ∈ g(C) [r >S p] ∧ NOT THE BEST
d. ∃q ∈ g(C) [p >S q]. NOT THE WORST
e. p IDENTITY

(ii) a. A scale S is defined as a set of ordered pairs of propositions (S ⊆ ℘(W) X ℘(W)).
b. For any S, p1 >S p2 means 'p1 is strictly higher than p2 on S'.
c. For any S, p1 ≥S p2 means 'p1 is equivalent to p2 or higher than p2 on S'

the optimal, nor the worst, least desirable situation, inducing the 'settling for less' effect that we have seen above (Nakanishi & Rullmann, 2009a):

(403) The preference ranking is the following: r<p< q
Anna solved one exercise<...<Anna solved five exercises< ...<Anna solved seven exercises

Since according to Nakanishi & Rullmann's semantics, concessive *at least* cannot modify an element which is either the most or the least preferred element of the scale, example (404) is correctly predicted to be infelicitous in our scenario. The same holds for the highest/most preferred element of the scale, as shown in (405).

(404) #At least, she solved one exercise

(405) #At least, she solved seven exercises

The Greek particles *esto* (**ke*) and *tulachiston* satisfy all the conditions in (402), similarly to English concessive *at least*. The associate of concessive *esto* (**ke*) and *tulachiston* in (406) is neither the optimal, nor the least desirable alternative on the pragmatic scale. The two particles in question induce a pragmatic bouletic/preference scale and there is at least one higher/more preferable contextual alternative (q) and one lower/less preferable (r). When the associate is situated at the lowest (407) or highest (408) endpoint of the scale, then both particles *esto* (**ke*) and *tulachiston* are infelicitous:

(406) ELISE *esto* (**ke*)/*tulachiston* pede askisis
solved esto ke/tulachiston five exercises
'At least, she solved five exercises'

(407) #Elise *esto* (**ke*)/*tulachiston* mia askisi[155]
solved esto ke/tulachiston one exercise
'At least, she solved one exercise'

(408) #Elise *esto* (**ke*)/*tulachiston* epta askisis
solved esto ke/tulachiston seven exercises
'At least, she solved seven exercises'

Since the particles *esto* (**ke*) and *tulachiston* pattern along with concessive *at least* (recall sections 7.1 and 7.2), the semantics proposed for concessive *at least* in (401) and (402) can be extended and adopted for the concessive elements *esto* (**ke*) and *tulachiston* as well.

7.4. Properties of epistemic Greek particles *tulachiston* and *to ligotero*

Apart from the concessive interpretation (repeated for convenience in (409)), the particle *tulachiston* may also give rise to an ignorance reading, the so-called epistemic[156] use of *at least* (Nakanishi & Rullmann, 2009a). Recall scenario 2 (repeated from above) where the speaker concedes with respect to the fact that Anna solved five exercises. In this case the particle *tulachiston* is felicitous.[157]

Scenario 2: I am a teacher and my students took an exam which consisted of several exercises. In order to pass the test, students need to solve at least four exercises. Solving fewer than five exercises is considered unsatisfactory, while

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155 Notice that example (407) is infelicitous on the basis that solving one exercise is considered to be the worst scenario and the assumed pragmatic scale is the one in (i).

(i) solve one exercise < solve two exercises < ...< solve seven exercises

However, if there is another alternative which stands lower on the scale, as the one in (ii), then example (407) becomes felicitous, because in this case the associate of *esto* (**ke*)/ *tulachiston* does not stand at the endpoint of the scale and is considered satisfactory (i.e. solving one exercise is better that solving no exercises) (cf. fn. 142):

(ii) solve no exercises < solve one exercise < solve two exercises <...< solve seven exercises

156 This meaning of *at least* is mentioned as *particulariser* in König (1991), following Quirk et al (1985), *focus* particle (Krifka, 1999), *superlative quantifier* (Geurts & Nouwen, 2007), *quantificational expression* that expresses speaker's insecurity (Büring, 2008), *epistemic* in Nakanishi &Rullmann (2009a) and the authors after (Biezma, 2013; Grosz, 2011a, 2011b).

157 The particle *esto* (**ke*) is also felicitous as we have seen, but I leave it aside at the current discussion.

solving seven is the optimal result. I thought my student Anna would do well at the exam. Anna managed to solve five exercises. In this scenario I can utter:

(409) Elise *tulachiston* pede askisis
solved tulachiston five exercises
'At least, she solved five exercises'

The same particle can be used also in scenario 3 where the speaker expresses his/her ignorance about the exact number of exercises that Anna solved.

Scenario 3: I am a teacher and my students took an exam which consisted of seven exercises. In order to pass the test, students need to solve at least four exercises. Anna is one of my students. You ask me how Anna did at the exam. I remember Anna passed the test, but I am not sure how many exercises Anna solved. In this scenario I can utter (410):

(410) Elise *tulachiston* pede askisis. Bori ke exi
solved tulachiston five exercises. Is.possible and six
'She solved at least five exercises. Probably even six'

In example (410) the speaker asserts that Anna solved five exercises, but (s)he considers it possible that she may have solved more than five. In this case, (s)he uses the particle *tulachiston* to express this ignorance.

Apart from the particle *tulachiston*, the epistemic reading can also be expressed by another particle, namely *to ligotero* (lit. 'the least'). As illustrated below, the particle *to ligotero* is an unambiguous particle giving rise only to an epistemic reading; it is infelicitous in scenario 2, as shown in (411) (i.e. it cannot convey a concessive interpretation), but felicitous in scenario 3, where it conveys an epistemic meaning, which crucially involves ignorance of the speaker as shown in (412):

Scenario 2: I am a teacher and my students took an exam which consisted of several exercises. In order to pass the test, students need to solve at least four exercises. Solving fewer than five exercises is considered unsatisfactory, while solving seven is the optimal. I thought my student Anna would do well at the exam. Anna managed to solve five exercises. In this scenario I can say:

(411) #Elise *to ligotero* pede askisis
solved to ligotero five exercises
'She solved at least five exercises'

Scenario 3*:* I am a teacher and my students took an exam which consisted of seven exercises. In order to pass the test, students need to solve at least four exercises. Anna is one of my students. You ask me how Anna did at the exam. I remember Anna passed the test, but I am not sure how many exercises Anna solved. In this scenario I can utter:

(412) Elise *to ligotero* pede askisis. Bori ke exi
solved to ligotero five exercises. Is.possible and six
'She solved at least five exercises. Probably even six'

Notice that the English particle *at least* is also ambiguous. It is compatible with speaker ignorance as well as concession, similarly to Greek *tulachiston*. For instance, (413) is felicitous in scenario 3 in which the speaker expresses his ignorance regarding the exact number of exercises Anna solved.

(413) Anna solved *at least* five exercises. Probably even six

In the next section, I will focus on the characteristic properties of these particles and I will show that the two epistemic particles, *tulachiston* and *to ligotero* share the same syntactic, phonological and semantic properties. In addition, I will argue that both particles behave similarly to English epistemic *at least* which supports the idea of a unified analysis of these particles.

7.4.1 The common properties of the epistemic particles tulachiston and to ligotero

Both particles *tulachiston* and *to ligotero* bear prominent phonological stress[158], as illustrated in (414).[159] Recall that concessive *tulachiston* did not bear prominent phonological stress, but the predicate did (repeated in (415)).

(414) Elise *TULACHISTON/to LIGOTERO pede askisis*
solved tulachiston/to ligotero five exercises
'She solved at least five exercises'

(415) ELISE *tulachiston* pede askisis
solved tulachiston five exercises
'At least, she solved five exercises'

Turning to their syntactic distribution, both epistemic *tulachiston* and *to ligotero* have to appear adjacent to the element they modify, either by preceding or following it. The latter is a more marked syntactic position.

(416) Elise < *tulachiston /to ligotero*> pede askisis
< *tulachiston /to ligotero*>
solved tulachiston/to ligotero five exercises
tulachiston/to ligotero
'She solved at least five exercises'

Notice that adjacency is a prerequisite in Greek, so the particle cannot modify the DP from the preverbal position. Example (417a) can only be interpreted as modifying the VP/IP, and not the DP *pede askisis*/'five exercises'. One possible scale for the interpretation of (417a) is the one provided in (417b):

158 I use capital letters in order to facilitate native speakers understand the right intonational pattern.
159 The spectrograms of (413) are provided in appendix III.

(417) a. *Tulachiston /to ligotero* elise pede askisis
tulachiston/to ligotero solved five exercises
'She solved at least five exercises'
b. *Pragmatic scale*: read the exercises < solve the exercises < correct the exercises (on her own)

Turning to English, epistemic *at least* may appear in several syntactic positions, as seen in (418), but it is dispreferred in a sentence initial position. Notice that since English does not require adjacency, the particle can also modify the complement DP from the preverbal position (a normal position for 'association with focus' type particles in English). It differs in this respect from Greek *tulachiston*/*to ligotero*.

(418) <??*At least*> she <*at least*> solved <*at least*> five exercises <*at least*>

Distinguishing epistemic from concessive at least

Nakanishi & Rullmann (ibid.) have pointed out several semantic differences between epistemic and concessive *at least* which have already been examined above in the discussion of the concessive elements *esto* (**ke*) and *tulachiston.* In the present section the same criteria will be applied to the epistemic particles *tulachiston* and *to ligotero*, and I will show that the two Greek particles behave similarly to English epistemic *at least.*

(i) *Preferability for higher alternatives on the scale*

Both Greek particles, as well as English *at least*, convey ignorance and show no preference for higher values on the pragmatic scale in question, as illustrated in (419) and (420) for Greek and English, respectively. Recall that the concessive elements *esto* (**ke*) and *tulachiston* express a preference for elements higher on the bouletic scale (cf. (390)).

(419) Dhen elise efta askisis, ala nomizo oti elise
not solved seven exercises, but think that solved
tulachiston/to ligotero pede
tulachiston/to ligotero five
'She didn't solve seven exercises, but I think she solved at least five'

(420) She didn't solve seven exercises, but I think she solved *at least* five

(ii) '*Settling for less*' *interpretation*

Finally, epistemic particles do not give rise to a 'settling for less' interpretation either in Greek or in English. Unlike concessive *esto* (**ke*) and *tulachiston*, *tulachiston* and *to ligotero* do not license such an interpretation for (421).

(421) Nomizo oti elise *tulachiston*/*to ligotero* pede askisis
think that solved tulachiston/ to ligotero five exercises
'I think she solved at least five exercises'

The fact that there is no 'settling for less' reading with epistemic particles becomes obvious also in (422). The oddity is due to the fact that there is a constradiction between ignorance effects triggered by the particles and the fact that the total number of exercises is seven in the given scenario. Example (422) would be felicitous if the speaker ignored the total number of exercsies of the test; in this case no 'settling for less' effects show up either. This should be compared to the oddity of example (423) with the concessive particles in which 'settling for less' interpretation shows up, hence the oddity.

(422) ??Elise *tulachiston/ to ligotero* efta askisis
solved tulachiston/to ligotero seven exercises
'??She solved at least seven exercises'

(423) #ÉLISE *tulachiston/ esto* (**ke*) efta askisis
solved tulachiston/ esto (*ke) seven exercises
'#At least, she solved seven exercises'

Based on the above considerations, I conclude that the Greek epistemic particles *tulachiston* and *to ligotero* show different properties from the concessive particles *tulachiston* and *esto* (**ke*) and that they share the semantics of English epistemic *at least*. In the next section, I will present the semantics for English epistemic *at least* which will also be adopted here for the Greek particles *tulachiston* and *to ligotero*.

7.4.2 Semantics of epistemic at least

We have seen that on the epistemic interpretation of *at least* in (424), the speaker asserts that the number of exercises Anna solved is five[160] (424a), but it might be possible that Anna solved more than five exercises (424b).

(424) Anna solved *at least* five exercises (*epistemic*)
a. Assertion: The number of exercises that Anna solved is five
b. Implicature: it is possible that Anna solved exactly five exercises or more

Epistemic *at least* is a scalar focus particle that relates the element that it modifies, its associate, to a set of contrastive expressions of the same category (Krifka, 1999). According to Nakanishi & Rullmann (2009a), it is a sentential operator that moves to the sentence initial position at LF, as shown in (425):

160 Notice that example (424) shares the same assertion with a sentence that does not contain *at least*. In example (i) the speaker asserts that the number of exercises that Anna solved is f, and, no ignorance effect arises in the absence of an epistemic particle such as *at least*. The implicature in (i) is that Anna did not solve six exercises.

(i) a. Anna solved five exercises
b. $\lambda P . \exists X [4 \leq |X| \wedge P(X)]$
c. Assertion: The number of exercises that Anna solved is five
d. Implicature: Anna did not solve six exercises (Grice's, 1975 maxims)

(425) LF: *At least* [Anna solved five exercises]

Moreover, it has been argued by Nakanishi & Rullmann (ibid.) that epistemic *at least* affects the truth conditions of the sentence, unlike concessive *at least*, as illustrated in (426). Let p and q be ordered propositions, and C the set of alternatives then, *at least* asserts that there is a true proposition q which ranks higher than or as high as the target proposition p. Applied to (424), possible values for q are that *Anna solved five exercises* and that *Anna solved 6 or more exercises* (Nakanishi & Rullmann, ibid.):

(426) *Truth conditions:* $\exists q \in C[q \geq p \wedge q(w) = 1]$

Nakanishi & Rullmann (2009a) propose that epistemic *at least* comes with a conventional implicature given in (427) stating that it is epistemically possible that some proposition q that ranks higher than p is true, in this case *Anna solved six or more exercises*:

(427) $\exists w'[Epist(w, w') \wedge \exists q \in C[q > p \wedge q(w') = 1]]$

Since English epistemic *at least* and Greek *tulachiston* and *to ligotero* pattern along, the above-mentioned semantics for English epistemic *at least* can also be adopted for the Greek particles.

The next question that arises is whether it is incidental that two particles from two different languages with the same meaning, viz. English *at least* and Greek *tulachiston*, both give rise to an ambiguity between an epistemic and a concessive interpretation. A further question is what makes *tulachiston* different from *to ligotero*, so that only the former can convey a concessive meaning. In order to answer these questions, I will explore the role of the superlative morphology in these two Greek particles behind the backdrop of two prominent theories of the semantics (Nouwen, 2010, 2015) and morphology (Bobaljik, 2012) of superlatives respectively.

7.5 Superlative morphology of epistemic *tulachiston* vs. *to ligotero*

In order to understand the differences between the particles *tulachiston* and *to ligotero,* I will rely on Nouwen's (2010, 2015) semantic account of numeral modifiers and Bobaljik's (2012) theory of superlatives. Based on Nouwen's (ibid.) classification between comparative modifiers (class A in Nouwen's terms) and superlative modifiers (Class B), I will show that the two elements in question trigger different implicatures. *Tulachiston* behaves similarly to comparatives (class A elements), while *to ligotero* is similar to superlatives (class B elements). In addition, I will argue that they differ in their underlying structure: *to ligotero* is a regular superlative, morphologically transparent to all native speakers, while *tulachiston* is an obsolete superlative type from ancient Greek, non-transparent to native speakers. Following Bobaljik (ibid.), this implies that the abstract representation of *to ligotero* contains an instance of the comparative morpheme and therefore qualifies as a regular superlative. On the other hand, the particle *tulachiston* shares the same properties of so called 'absolute superlatives'/'elatives'. Deviating from Bobaljik though, I will claim that elatives also contain a morpheme that expresses comparison, yet in different way than in regular superlatives.

The proposal to be submitted will account for the fact that only *tulachiston* but not *to ligotero* licenses a concessive interpretation. I will suggest that more generally only absolute superlatives can trigger a concessive interpretation, while regular superlatives and comparatives cannot do so. This is so because elatives locate their associate close to, but not at the top end of the pragmatic scale, and presuppose at least two more alternatives (one higher and one lower than the associate of the superlative). The same scale is used with concessive elements (cf. Nakanishi & Rullmann, 2009a), as with optatives (Grosz, 2011b). On the other hand, regular superlatives locate their associate at the top end of the scale. Hence, they cannot express concession because concessive associates can never stand at the end of the scale (Nakanishi & Rullmann, ibid.). Comparatives cannot convey concession either, since they trigger a scale with two alternatives. This account will provide an insight why

concession is always expressed by elements that bear superlative morphology but never by elements with comparative morphology.

Overall, the above findings will be in accordance with the general assumptions and findings made by Nouwen (ibid.) and Bobaljik (ibid.). However, I will deviate from these authors by proposing that: (a) Nouwen's Class A has to be extended to include elatives/absolute superlatives apart from comparative elements (b) absolute superlatives/elatives also contain a morpheme that triggers comparison, but it is of a different nature than the one contained in regular superlatives.

7.5.1 Nouwen's (2010) theory on superlative modifiers

Nouwen's theory (2010) takes into consideration the morphological structure of numeral modifiers and relates it to semantics. Specifically, Nouwen (2010, 2015) classifies modifiers of numerals into two classes based on their structure: class A contains elements with comparative morphology, (428a) while Class B elements involve superlative morphology, as seen in (428b).

(428) a. Class A: comparative modifiers of numerals
more than/fewer than/less than
b. Class B: superlative modifiers of numerals
at least/at most/maximally

The taxonomy proposed by Nouwen is motivated by the observation that Class A and Class B elements have distinct semantic properties. Specifically, there are two systematic differences between comparative (class A) and superlative numeral modifiers (class B). First, only elements of class B impose an antispecificity requirement. As shown in (429), a class B element with superlative morphology, such as *at least*, is infelicitous when the ignorance effect is cancelled. In example (429) the speaker is aware of the exact number of mistakes. This renders the use of *at least* odd. On the other hand, a comparative modifier (class A) such as *more than* is more tolerant in that it remains felicitous, even though the ignorance effect is cancelled.

Antispecificity requirement

(429) There were exactly 62 mistakes in the manuscript, so that is *#at least/more than* 50

A second, related difference between the two types is that elements of class B give rise to strong ignorance effects, while elements of Class A never do. To illustrate, example (430) can be uttered by a person in a situation in which in order to receive a discount one needs to have two children or more. The use of *at least* sounds odd in this context because normally people know the number of their children. On the other hand, the class A particle *more than* is licit in (430) suggesting that class A modifiers have to be treated differently than the superlative class exemplified by *at least*. In sum, class A and class B elements, give rise to different implicatures which in turn correlate with their internal morphological make-up.

(430) I have *#at least/more than* two children

7.5.2 Nouwen's analysis of class B elements as disjunctions[161]

In order to account for the above-mentioned properties of superlative modifiers, Nouwen[162] (ibid.) proposes that class B elements express non-strict comparison relations (≤, ≥), as seen in (431) and (432), which intuitively correspond to disjunctions. On this view, ignorance effects arise due to the implicatures of disjunction:

(431) $x \leq n := x = n \vee x < n$

(432) $x \geq n := x = n \vee x > n$

161 Nouwen (ibid.) leaves it open what the semantics for class A should be.

162 Nouwen's theory makes no reference to *concessive* uses of superlative modifiers (i.e. *at least, at most*). The theory deals with comparative and superlative elements that modify numerals.

It is well known that sentences with disjunction carry an *ignorance* implicature (Kamp, 1973). In example (433), the fact that the speaker knows what John ate, contradicts the implicatures of disjunction.

(433) John ate an apple or a banana, #namely a banana

Scalar implicatures can be w*eak*/*primary* ones or *strong* (Sauerland, 2004; Fox, 2006; Geurts, 2011). In the case of superlative modifiers, weak implicatures arise. Nouwen links this effect to the fact that uttering a disjunction gives rise to the weak implicature that the speaker lacks the belief that p is true (434a) and that q is true (434b). Since the speaker asserts p∨q, (s)he believes that one of them is true, but does not know which one. When combined, (434a) and (434b) thus give rise to an *ignorance* effect.

(434) a. $\neg Bp$ (where B:= believe)

b. $\neg Bq$

In other words, if the speaker asserted p∨q, then he would believe Bp∨q; this means that ignorance effects are *weak* implicatures (Sauerland, 2004; Geurts 2011).

Notice that strong implicatures do not trigger disjunctions, since these would result in a contradiction. A strong implicature would entail that the speaker believes that both p and q are false (435). Strong implicatures contradict the speaker's assertion and are therefore excluded.

(435) a. $B\neg p$

b. $B\neg q$

On this conception, in our *at least* example, repeated in (436), the speaker asserts that Anna solved either exactly five exercises or more than five exercises, as formalized in (437). Given Nouwen's treatment of implicatures in

disjunction, the sentence has the weak implicature that the speaker does not believe that Anna solved exactly five exercises and that she may have solved more.

(436) Anna solved *at least* five exercises

(437) *Assertion*:

$B[\lambda x.\text{exercise}(x) \wedge \text{solve}(j, x) \models f(\{n : n \geq 5\})$

Presupposition: $|f(\{n : n \geq 5\})| > 1$
Implicatures: there is no n ≥5, such that the speaker believes that John has solved exactly n exercises.

Thus, if we follow Nouwen's analysis, it can be explained why epistemic particles in Greek have superlative morphology. In (438a) and (438b) it is shown how the weak implicatures arise. When the speakers' beliefs are combined, we arrive at the weak implicature which conveys speakers' ignorance. (438c) states that it is not case that the speaker believes that the exact number is five and it is not case that the speaker believes that the exact number is six (or higher). Thus, speaker ignorance is a consequence of the speaker's inability to identify the exact number of exercises solved. (438c) states that it is case that the speaker believes that the exact number is equal or higher than five. Thus, speaker ignorance is a consequence of the speaker's inability to identify the exact number of exercises solved.

(438) a. $\neg B[x = 5] \wedge \neg B[x = 6] \wedge \neg B[x = 7] \wedge B[x \geq 5]$
(anti specificity)

b. $\neg B[x \geq 6] \wedge \neg B[x \geq 7]$

c. (combined)

$\neg B[x = 5] \wedge \neg B[x = 6] \wedge \neg B[x = 7] \wedge \neg B[x \geq 6] \wedge \neg B[x \geq 7] \wedge B[x \geq 5]$

On the other hand, strong implicatures are blocked, as illustrated in (439), since the speaker lacks the information to assert that Anna solved exactly five or any higher number of exercises:

(439) *Strong implicatures (blocked):
$B \neg[x= 5] \wedge B \neg[x= 6] \wedge B \neg[x= 7] \wedge B \neg[x\geq 6] \wedge B \neg[x\geq 7] \wedge B[x\geq 5]$

Moreover, this analysis predicts that epistemic *tulachiston* and *to ligotero* should be similarly analyzed as antispecific class B elements corresponding to English *at least*, since both of them include superlative morphology. *To ligotero* consists of the definite article *to/*'the' and the comparative form of the adjective *ligos*, which is *ligotero/*'less' resulting in a superlative type. *Tulachiston* also consists of the definite article *to/* 'the' combined with the superlative form of *ligos*, *elachiston/* 'least' forming a single opaque lexical item *tulachiston* (<*to elachiston*), which is synchronically non-transparently superlative. As will be seen in the next section, however, there are subtle differences between epistemic *tulachiston* and *to ligotero.*

7.5.3 Epistemic tulachiston vs. to ligotero

So far, the two particles, epistemic *tulachiston* and *to ligotero,* have been treated as mutually interchangeable. In this section, I will revise this picture and will present evidence that they do show some subtle differences in interpretation. While *to ligotero* is a standard superlative modifier, epistemic *tulachiston* actually turns out to behave similarly to comparative numeral modifiers (i.e. *more than*/*less than*) as far as its implicatures are concerned.

(i) Antispecificty requirement

Starting with the antispecificity requirement, *to ligotero* shows the expected antispecificity restriction, similarly to elements of class B. It is deviant when the speaker cancels the strong implicatures, as in (440). Quite surprisingly, though, *tulachiston* is tolerated when the strong implicatures are cancelled,

similarly to comparative numeral modifiers (class A elements) such as *perissotera apo/*'more than', as shown in (441):

(440) To hirojrafo ihe *#to ligotero/tulachiston* 50 lathi.
the manuscript had to ligotero/tulachiston 50 mistakes.
Sigekrimena, 62.
Specifically, 62.
'The manuscript had #at least/more than 50 mistakes.
Specifically, 62'

(441) To chirografo ihe *perissotera apo* 50 lathi.
the manuscript had perissotera apo 50 mistakes.
Sigekrimena, 62.
Specifically, 62
'The manuscript had more than 50 mistakes.
Specifically, 62'

(ii) Strong ignorance effects

Turning to the second criterion, *to ligotero*, once again, behaves like a typical class B element giving rise to strong ignorance effects, leading to deviance in (442). On the other hand, *tulachiston* is fine in the same context because it can –similar to class A elements (443)– escape strong ignorance effects:

(442) Eho *#to ligotero/tulachiston* dio pedja[163]
have to ligotero/tulachiston two children
'I have #at least/ more than two children'

(443) Eho *perissotera apo* dio pedjia
have perissotera apo two children
'I have more than two children'

163 Personally, I don't like this example that much, but I do find contrast with respect to the felicity of this example with *tulachiston* (vs. *to ligotero).*

These differences correlate with the fact that *to ligotero* involves the common strategy of forming superlatives in Modern Greek (definite determiner + comparative form of adjective). By contrast, *elachiston* is the superlative form of *ligos* in Ancient Greek which has survived in Modern Greek, but without retaining its transparent superlative form and meaning.

(iii) Evidence from Chinese

It is interesting to note that similar facts are also observed in Chinese which also employs two particles for epistemic *at least*, viz. *zui-shao* and *zhi-shao* (Nouwen, 2010). One of these elements behaves like a regular class B element, *zui-shao,* showing strong ignorance effects, as is illustrated in (444), while the other particle, *zhi-shao* is like Greek *tulachiston* immune to strong ignorance effects, as shown in (445).

(444) #Sanjiaoxing *zui-shao* you liang-tiao bian (Class B)
triangle at least have two side
'A triangle has at least two sides'

(445) Sanjiaoxing *zhi-shao* you liang-tiao bian (Class A)
triangle at least have two side
'A triangle has more than two sides'

What is remarkable to note is that in both Greek and Chinese, the particle that is morphologically a class B element but semantically behaves like a Class A element is the one that is able to convey a concessive meaning; only *tulachiston* in Greek and z*hi-shao* in Chinese can be concessive.[164,165] In table 11, I summarize the cross linguistic distribution of particles corresponding to *at least* in English, Greek and Chinese.

164 I would like to thank Mingya Liu for helping me with Chinese data.
165 Although Nouwen (2010) does not distinguish epistemic from concessive *at least* in his presentation of Chinese facts, he mentions this difference.

Table 11. The taxonomy of English, Greek and Chinese *at least*

	English	***Greek***	***Chinese***
Particle(s) with epistemic meaning	*At least*	*to ligotero/ tulachiston*	*zui-shao/ zhi-shao*
No Semantic properties of superlative modifiers (class A elements)	**At least*	**to ligotero/ √ tulachiston*	**zui-shao/ √ zhi-shao*
Concessive use of the particle	*At least*	**to ligotero/ √ tulachiston*	**zui-shao/ √ zhi-shao*

7.5.4 Interim conclusion

In the preceding section, I have explored the epistemic particles *to ligotero* and *tulachiston*, taking into account the recent theory of comparative and superlative modifiers proposed by Nouwen (2010, 2015). This theory led me to isolate some fine-grained differences in the implicatures of the two epistemic particles which at first sight appeared to behave alike. What I observed, on the basis of evidence from Greek and Chinese, is that superlative elements that exhibit properties of comparative modifiers are the ones that may convey a concessive meaning, in addition to their epistemic interpretation. Based on our discussion so far, it can be concluded that there seems to be no one-to-one link between morphology and semantics.

It also follows that Nouwen's theory should be modified so as to leave some room for hybrid elements. In the following section, I argue that this enrichment can be achieved once we accept the distinction between true superlatives and elatives made in Bobaljik (2012).

7.6 Comparatives vs. superlative modifiers: Bobaljik (2012)

In this section I will explore the hypothesis that Bobaljik's (2012) analysis of superlatives might help us to better understand the properties of *tulachiston*. Based on Bobaljik's generalizations about superlatives, I will show that *tulachiston* is an element with superlative morphology that operates like elatives/absolute superlatives, while *to ligotero* is a regular comparative superlative. If my hypothesis is correct, then *tulachiston* provides a link between epistemic and concessive elements. This leads to the conclusion that elements

that also convey an elative meaning are the ones that can be concessive, supplementing Nouwen's typology. The hybrid properties of *tulachiston* that were observed in the previous section receive an analysis which also leads to the novel prediction that such hybrid elements are cross linguistically expected to combine with elative morphology. This prediction is verified in Chinese.

Bobaljik (2012:p.32) demonstrates that the morphological representation of true superlative elements properly contains the comparative. The rationale behind this hypothesis is that the meaning 'more than all others' is too complex to be expressed monomorphemically. Therefore, it should be split up into a piece meaning '*more*' and another (roughly) corresponding to '*than all (others)*'. This is expressed by the containment hypothesis in (446a), which entails that no language has a true superlative morpheme that attaches to adjectival roots, as in (446b).

(446) *The Containment Hypothesis*
a. [[[adjective] comparative] superlative] 'Adj + more + than all (others)'
b. * [[adjective] superlative] 'Adj + more than all others'

Bobaljik (ibid:p.29-30) derives the two morphological generalisations (447) and (448) from the Containment Hypothesis (see also Ultan, 1972):

(447) The *Comparative-Superlative Generalisation* (CSG1):
If the comparative degree of an adjective is suppletive, then the superlative is also suppletive (i.e. with respect to the positive).

(448) The *Comparative-Superlative Generalisation* (CSG2):
If the superlative degree of an adjective is suppletive, then the comparative is also suppletive (i.e. with respect to the positive).

The two parts of the CSG require that an adjective must not be suppletive in only one of the two degrees of comparison (only in the comparative or only in the superlative degree). An adjective which does not form a regular comparative/superlative type, necessarily has a suppletive form both in the comparative and the superlative degree.

As a consequence of the two *Comparative-Superlative Generalisations* (CSG1-CSG2), two possible patterns are attested cross-linguistically; the so-called ABB pattern, and the ABC pattern. The former pattern involves two related suppletive forms of the comparative and the superlative, while the latter is built from two different suppletive forms of the comparative and the superlative. The unattested *AAB pattern, given in Table 12, is banned since it involves a regular form of the comparative but a suppletive form of the superlative, violating CSG2. The same holds for the unattested *ABA pattern, illustrated also in Table 12, where the comparative form is suppletive, but the superlative is a regular form, violating CSG1, based on Bobaljik (ibid.: 29).[166]

Table 12. *Possible patterns of the three degrees of adjectives*

	A *Positive*	**B** *Comparative*	**C** *Superlative*
ABB	Good	Better	Best
ABC	Bonus	Melior	Optimus
*AAB	Good	Gooder	Best
*ABA	Good	Better	Goodest

Crucially and importantly for present purposes, Bobaljik's Comparative Superlative Generalisations concern relative superlatives which give rise to the meaning ‘more X than all others’ and not absolute superlatives, also known as *elatives*. Bobaljik (2012:p.28) reports that “the latter do not have a strictly comparative sense”, and mean instead adjective “to a very high or excessive degree. [..]”. As Bobaljik shows, they are not subject to the generalisations laid

166 In order to account for the ungrammaticality of the *ABA pattern Bobaljik resorts to the *Elsewhere Condition* according to which more specific rules take precedence over more general ones” (Bobaljik, 2012:219).

out here, precisely because they *lack* the comparative component of meaning (and hence the structure) that derives the patterns in table 12. Examples of absolute superlatives/elatives are given in Table 13, adopted from Bobaljik (ibid.).

Table 13: examples of absolute superlatives/elatives based on Bobaljik's (ibid.p.2)

	Absolute superlatives/ ***elatives***
Italian	buon-issim-o 'very/extremely good', bell-issim-a 'very/extremely beautiful'
Greek	*-tatos*: nostimo-*tatos* 'very/extremely tasteful'
Slavic	Prefix *pre*: *pre-lép* 'too/very beautiful'
Russian	Suffix *-ejš-ij*: ern-*ejš-ij* drug 'very/most loyal friend

Another such case is the one of the Latin superlative form *minimally*[167] **,** which derives from the Latin comparative form *minor* and conveys only an elative meaning in English (cf. *-issim-* above). As shown in example (449), *minimally* cannot be paraphrased by *less than all others*; rather it must be paraphrased with the expression *very little* or *less than expected*. On the other hand, the regular superlative form, *the least* in (450) can be paraphrased as *John ate less than all others*.

(449) John ate *minimally*

(450) John ate *the least*

The question from the present perspective is whether the *Comparative-Superlative Generalisations* can shed more light onto the observed discrepancy between the two superlative modifiers, *to ligotero* and *tulachiston*. It would be interesting to explore whether Bobaljik's generalisations and morpho-semantic distinctions can lead to a deeper understanding of the properties of hybrid elements like *tulachiston*.

167 For a definition of *minimum* see http://www.etymonline.com/index.php?term=minimum

7.6.1 Bobaljik's (2012) containment theory and to ligotero vs. tulachiston

In this section I will argue that, following Bobaljik's assumptions, *to ligotero* behaves like a truly superlative element, while *tulachiston* does not. Hence no comparative morpheme of the comparatives should be present in *tulachiston*, since the particle behaves similarly to elatives.

(a) Morphology

As has already been mentioned above, both *to ligotero* and *tulachiston* at first sight seem to bear superlative morphology. Both particles consist of the definite article *to* ('the') and are followed by a comparative form, a common way of forming superlatives cross-linguistically (see Bobaljik, 2012). There is a crucial difference, however, which seems to matter for their semantic behaviour. While *to ligotero* is followed by the regular comparative form of the Modern Greek adjective *ligos* i.e. *ligotero, tulachiston* consists of the suppletive Ancient Greek-based superlative form of *ligos, elachiston.* The suppletive form *tulachiston* was in use in Ancient Greek and has survived till today, while a new regular type of superlatives has developed in parallel and is now productively used, namely the fully transparent form *to ligotero*. Notice only *ligotero* is productive, as shown in (451). The suppletive comparative form *elasson* –in plural *elassones*– sounds archaic (452) and is unacceptable in a comparative construction:

(451) I Anna elise *ligoteres* askisis apo ton Niko
the Anna solved fewer exercises than the Niko
'Anna solved fewer exercises than Nick'

(452) #/ ??I Anna elise *elassones* askisis apo ton Niko
the Anna solved fewer exercises than the Niko
'Anna solved fewer exercises than Nick'

I conclude that only the form *to ligotero* is morphologically and semantically a transparent comparative in Modern Greek. I take this as evidence that

tulachiston is not a true superlative in Bobaljik's (2012) terms, and therefore does not need to meet the containment condition, which demands that the superlative includes the comparative form of comparatives.

Moreover, not being a true superlative, *tulachiston* does not fall under Nouwen's semantics for superlatives and, hence, it is correctly predicted not to qualify as a Class B element.

I therefore conclude that the Greek particles discussed in this chapter provide a strong independent argument for combining Nouwen's semantic theory with Bobaljik's containment approach towards superlatives.

(b) The 'more/ less than all others' test

More evidence that *to ligotero* differs from *tulachiston* with respect to the containment condition comes from paraphrases of the form 'less than all others'. Example (453), which contains the form *to ligotero*, can be paraphrased as *Anna ate less than all others*. Thus, (453) entails a comparison as revealed by (454), despite the fact that there is no explicit reference to a standard of comparison.

(453) I Anna efage *to ligotero*
the Anna ate to ligotero
'Anna ate the least'

(454) *to ligotero*: [[[adjective] **comparative**] superlative]

On the other hand, the form *elachista* in example (455) cannot be paraphrased as *Anna ate less than all others*; it can only mean *to a minimal degree*. Once again, this shows that *tulachiston* does not entail the comparative form; there is no containment representation, as schematized in (456).

(455) I Anna efage *elachista*[168]
the Anna ate elachista
'Anna ate very little food'

(456) *elachista:* *[[[adjective] comparative] superlative]

The structure of *elachista* and *tulachiston* remains elusive at the moment. Both particles seem to involve a superlative-like morpheme attaching directly to the root, simplex in the former and complex in the latter case. Crucially, this superlative morpheme is no longer productive as a superlative and hence these forms do not contradict Bobaljik's claim that true superlatives contain the comparative.

Based on the above, we end up with the following state of affairs. The particle *tulachiston* behaves like an absolute superlative/elative, hence it should not contain the morpheme of the comparative in its structure. This correlates with the fact that *tulachiston* does not behave like a Class B element. At the same time, we saw evidence that *tulachiston* shares the same implicatures with comparative numeral modifiers (Class A elements), which means that the particle should qualify as a comparative in terms of Nouwen's (2010, 2015) theory. This looks like a somewhat paradoxical conclusion: *tulachiston* inherits the implicatures of comparatives but, at the same time, lacks the component of comparison. The paradox can be avoided, though, if we assume that Class A is a wider category that contains elements that introduce all types of comparison, and not just comparatives proper. This way, it becomes possible to explain that different type of elements share the same implicatures. Class A includes elements introducing comparison, comparative elements, but also elatives/ absolute superlatives. In this way, we preserve Nouwen's main classification that Class A elements differ from Class B with respect to their implicatures. We

168 Notice that in example (455) I used the adverbial form *elachista* which lacks the definite article, because the form *tulachiston* gives rise only to a concessive meaning, as shown in (i).

(i) I Anna efage *tulachiston*
the Anna ate tulachiston
'At least, Anna ate'/ '#Anna ate very little food'/'#Anna ate the least'

enrich Class A though by elements that introduce variations of inequality more generally. In addition, we maintain Bobaljik's universal generalisations that only true superlatives contain the comparative morpheme of comparatives. But we deviate from Bobaljik by stating that elatives introduce some sort of comparison. This could be related to the distinction between implicit and explicit comparison in the sense of Kennedy (2007). In accordance with Bobaljik, it is assumed that elatives do not contain the comparative morpheme (they are not transparent morphologically), but they introduce some sort of comparison relation nonetheless.

7.6.2 An analysis of elatives/ absolute superlatives and tulachiston

The idea that elatives/ absolute superlatives contain some sort of comparison is not new. Sapir (1985: p.146) claims that absolute superlatives could be explained as resulting from a shift in the perspective (i.e. standard of comparison) under which an original relative superlative is viewed with subsequent weakening in intensity of the gradable property.[169] This view is interesting in the sense that it provides an insight into how also older types of relative superlatives have evolved into absolute superlatives/elatives, as for example seen with Greek *-tatos* or the suppletive form *-istos* (i.e. *elachistos*). These forms conveyed a relative superlative meaning in Ancient Greek, but only express an absolute superlative/elative one in Modern Greek.

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169 Elatives are considered as non-comparative elements in traditional grammars. Pound (1902:58), in her analysis about elatives in English of the 15th and 16th century, claims that elative forms are common "before titles, in phrases of compliment, in direct address, in exclamations and simply to give emphasis". Pound refers to elatives as lacking any comparison: "the elative or absolute construction of the comparative and superlative is used to indicate a quality in a person or a thing or idea in an especially high degree without definite comparison with other persons or things or ideas". The same view is adopted by Jespersen (1965) and Ultan (1972). Ultan (1972: p.125) also considers elatives as lacking the true standard of comparison; they are "incomparable, hence beyond the pale of comparative systems". These are "items thus compared are not to be taken as possessing the given quality in the highest degree, rather in a very high degree. Whereas relative superlative constructions include a definite standard of comparison, absolutes lack any specific standard".

Following Sapir's intuition and Bobaljik's superlative generalisations I propose that absolute superlatives are weakened forms of relative superlatives. Elatives do not lack a comparative component. They contain a morpheme that introduces an inequality relation, even though this is not the same comparative relation that is part of relative superlatives in the sense of Bobaljik. What the nature of this element is and how it is related to regular comparatives has to be left open at the moment. In any case, weakening in the interpretation leads to a shift in the semantics of the comparative morpheme. This implies that while the comparative morpheme of relative superlatives is analysed along the lines of 'more than any other x', the comparative morpheme of absolute superlatives has a different interpretation which could be paraphrased along the lines of 'more than the expected regular bound x'. On this view, elatives introduce a pragmatic scale, stating that the element in question retains the property x, not to the highest degree of the pragmatic scale, as relative superlatives do, but higher than the ordinary representative element of the assumed pragmatic scale.

The hypothesis according to which elatives contain some sort of comparison also has empirical consequences attested in examples such as (457). As seen in (457), the continuation contradicts the interpretation of the elative form in the first sentence, hence its oddity. The speaker uses the elative form of Greek ending in *-tatos* to convey that this person is most clever, followed by the assertion that he does not stand out from his classmates. This contradicts the meaning of the elative form of the adjective, resulting in infelicity.

(457) Ine exipnotatos. #Dhen xechorizei apo tus
is cleverest. NM distninguishes from the
simathites tu
classmates his
'He is a most clever person. #He doesn't stand out from his classmates'

Elatives behave in this respect similar to positive forms modified by *very*. Thus, *exipnotatos/* 'most clever' should make roughly the same meaning contribution as pio exipnos/ 'very clever'.

Notice that the same example with the adjective in the positive form is felicitous, as seen in (458) indicating that the elative form induces a different implicature.

(458) Ine exipnos. Dhen xechorizi apo tus simathites tu
is clever. NM distninguishes from the classmates his
'He is clever. He doesn't stand out from his classmates'

If the elative form is followed again by the expression '…more than I expected' then the sentence becomes felicitous as seen in (459).

(459) Ine exipnotatos. Pio exipnos ap' oti perimena
is cleverest. more clever than I expected
'He is a most clever person. He is cleverer than I expected'

Example (459) is compatible with the current approach towards the interpretation of the elative form. This is so because the pragmatic scale introduced by the elative is as in (460). What the scale in (460) shows is that the elative is located above the standard of comparison which is considered to mark the point on the scale that separates negative from positive gradable adjective denotations. For instance, ine exipnotatos/'He is a most clever person' is expressing a true proposition if the question ranges above the standard value on the scale of interest. Elatives introduce the additional requirement that the individuals that fall in their positive denotation are above a scale point that itself is higher than the standard (459):

(460) *Scale*

|_____|_____|_____|

Lowest *Standard* ***Elative*** Highest

The associate element of the elative form does not overlap with the top end element on the scale, as seen in the example (461). The speaker in (461) uses an absolute superlative to express his/her opinion about the person. Then, (s)he becomes more more informative; (s)he clarifies, in the second sentence, that the element in question not only has the property to a higher degree than a typical representative, but it is considered to have this property to the highest degree compared to the other elements on the pragmatic scale, adding a more informative continuation.

(461) Ine exipnotatos. Vasika, ine o pio exipnos pu echo
is cleverest. Actually, is the more clever that have
gnorisi
known
'He is a most clever person. Actually, he is the cleverest person I know'

The fact that the reverse order in which the less informative sentence follows the more informative one results in infelicity, as in (462), supports our claim about the analysis of the elative as an expression of inequality, even though the comparison relation implicated in the elative is not as strong as the one contained in the superlative form.

(462) Ine o pio exipnos. ??Vasika ine exipnotatos
is the more clever. Actually, is cleverest
'He is the cleverest. ??Actually, he is a most clever person'

Finally, notice that an elative form cannot associate with an element which is beyond the regular/typical element x, as documented by the ungrammaticality of (463) and its scale in (464):

(463) #Ine elachista exipnotatos. Ochi oso exipnos perimena
is minimally cleverest. Not as clever expected
'He is minimally most clever. Not as clever as I expected'

(464)

|_____|_____|_____|

Lowest ***Elative*** *Standard* Highest

And of course, an elative can never associate with the element standing at the top end/bottom of the scale as the ungrammaticality of example (465), relative to the scale in (466), reveals:

(465) #Ine elachista exipnotatos. Vasika ine o pio ligo exipnos
is minimally cleverest. Actually, is the more little clever
'#He is minimally most clever. Actually, he is the least clever one'

(466)

|_____|_____|

Elative *Standard*

What we can conclude is that elatives must not mark endpoints of the pragmatic scale. Their meaning contribution is to convey that the element they modify stands higher than the typical regular element x of the scale in question. The fact that the associate of an elative cannot stand at the top end of the scale accounts for the fact that elative forms may appear in concessive and optative constructions. What optatives, concessives and elatives have in common is that they trigger a pragmatic scale which includes more than two alternatives in

which the position of the associate is considered satisfactory if it is located above the regular bound x (cf. sections 7.2.1 and 7.3).

Based on the above, the semantic analysis for optative and concessive constructions also carries over to elatives. Since all three constructions presuppose a scale with more than two alternatives, the conventional implicatures of concessive English *at least* and the Greek particles *tulachiston* and *esto* (**ke*) (Nakanishi & Rullmann, 2009a) can be adopted for elatives. The alternatives induced by an elative form are ordered and reflect an evaluate ranking illustrated in (467).

(467) $\forall x,y \in C[y > x \Leftrightarrow$ y *is preferred to x*]

The element modified by the elative form does not stand at the top end of the induced scale, as posted by (468) and (469) respectively:

(468) i.$\exists z \in C[z > y]$
there is a proposition z that ranks higher than y and which is preferred

(469) ii. $\exists x \in C[x < y]$
there is a proposition x that ranks lower than y and which is less preferred

The proposed analysis of elative forms has mainly been based on Greek, but the connection between the semantics of elative forms and concessive elements should hold cross-linguistically. Turning to Chinese, which has also been examined above, we see that the prediction about the relation between morphology and availability of concessive interpretation is verified. Recall that Chinese uses a regular type, the relative superlative form *zui-shao*/'at least' which according to Bobaljik's analysis is a true superlative element, hence contains the comparative morpheme. In accordance to our expectations, this element cannot convey a concessive meaning (Nouwen, ibid.). On the other

hand, the element *zhi-shao*/'at least' which can induce both an epistemic and a concessive meaning is not a regular form for superlatives. Rather it is a superlative type restricted in use. A cross linguistic study of the morphology of elative forms and its relation to concessive particles is left for the future.

7.6.3 Elatives and concession in reduplication forms

An interdependency between elatives and concessivity can also observed with another category, viz. particles which are formed by reduplication. Reduplication is a common way of forming superlatives cross linguistically (Ultan, 1972). Greek cannot use reduplicative forms in relative superlatives, as seen in (470). The comparative *pio*/'more' renders (470) infelicitous, as the grammaticality of (471) suggests. Greek employs reduplication to convey the meaning of an elative/absolute superlative, as illustrated in (472) and (473):

(470) *To vivlio vriskete pio *kato kato* sti vivliothiki
the book locates more down down to.the bookcase
'The book is at the very bottom of the bookcase'

(471) To vivlio vriskete *kato kato* sti vivliothiki
the book locates down down to.the bookcase
'The book is at the very bottom of the bookcase'

(472) To vivlio vriskete *pano pano* sti vivliothiki
the book locates up up to.the bookcase
'The book is at the very top of the bookcase'

(473) To vivlio vriskete *pera pera* sti vivliothiki
the book locates beyond beyond to.the bookcase
'The book is at the very end of the bookcase'

Interestingly, reduplication is also a strategy to express concessivity when combined with the definite article *to* or the proposition *se/s(to)*, illustrated by

the idiomatic expressions *to poli poli* or *sto kato kato* as seen in (474) and (475) respectively.

(474) *To poli poli* na erthi mono i Anna
the much much to come only the Anna
'At worst, only Anna will come'

(475) *Sto kato kato* dhen ipe ke tipota
to.the down down, NM said and anything
'In the end, (s)he didn't say anything'

The fact that the same kind of formation process is used to express the meaning of an absolute superlative and concessivity is again in accordance with our conjecture that concessive elements are closely related to elatives.

7.7 Overall conclusions

Starting with the ambiguous particles *at least* in English and *tulachiston* in Greek, I addressed the question whether there is a systematic relation between epistemic and concessive particles and tried to elucidate the nature of this. In an attempt to answer these two questions, I presented two prominent theories that explore the semantics of *at least* (Nouwen, 2010, 2015) and the morphology of gradation (Bobaljik, 2012). Applying Nouwen's results (ibid.), I showed that the Greek epistemic superlative modifier *to ligotero* behaves like a regular superlative (class B) element. By contrast it was seen that there is an unexpected mismatch between morphology and semantics with the superlative particle *tulachiston* which is morphologically a class B element, but, in many respects displays properties closer to that of comparative elements of class A. These results seemed puzzling at sight.

In order to resolve the conflict, I recruited aspects of Bobaljik's theory of superlatives. The discussion revealed some additional differences between the two particles *to ligotero* and *tulachiston*. Applying Bobaljik's morphological generalisations, I concluded that the particle *to ligotero* is a true superlative

element, which properly contains the comparative morpheme, while *tulachiston* exhibits properties similar to elatives/absolute superlatives. This set of assumptions explains why *tulachiston* does pattern along with regular Class B elements in Nouwen's typology; *tulachiston* does not behave like a regular class B element because it is not a regular superlative.

Specifically, I have suggested that *tulachiston* is an elative form embedding a morpheme encoding a type of comparison, which is sufficiently similar, but not identical, to the inequality section contained in regular comparatives. Following Sapir (1985), I proposed that *tulachiston* and elatives in general should be analysed as weakened forms of regular superlatives which contain a meaning component along the lines of 'more than expected' or 'more than the regular element x of the pragmatic scale'. As a result, elatives entail some type of comparison making them look like comparatives. In addition, I have suggested that Nouwen's class A should be extended so as to include not only comparative elements, but also elatives. In this way, it became possible to account for the fact that *tulachiston* shares some central properties with comparative elements.

Finally, I have suggested that there is a link among elatives, concessive elements and optatives. All these have a common semantic core built on a ranking scale. In all three cases, a pragmatic scale is triggered in which the associate of the particle is located above the standard/regular alternative. In addition, the associate must not be the endpoint of the scale either in elatives or concessives or optatives. This restriction explains why the same element (i.e. *tulachiston* in optatives and concessives) or the same form (i.e. reduplication) can surface in more than one construction. Moreover, it captures the fact that true superlative elements, such as *to ligotero* are excluded from environments that tolerate elatives, optative and concessive elements.

Although the approach does not provide a detailed formal analysis of elatives and concessive elements, I hope to have shed, at least, some light on the link between these two classes. It would be interesting to test whether the correlations under discussion also apply cross-linguistically. Given that there are other elements that can be concessive without being epistemic (i.e. *esto*),

one would for instance have to explore the nature of these elements. This task needs to be relegated to further research, though.

Chapter 8

Conclusions

The current thesis dealt with two main issues: a) NC in languages that show hybrid NC properties and b) the semantic properties of NC elements, and particles morphologically related to these NC elements. The discussion begun with a presentation of negation in Double Negation languages and Negative Concord Languages. Next, I focused on NC in Ancient and Modern Greek, and on the properties of Ancient and Modern Greek n-words. I showed that Ancient Greek was a non-strict NCL which has evolved to what is considered to be a strict NCL (chapter 1). Next, I brought to attention the NC properties of a category of expressions which include the negative morpheme *ou*-, arguing that Modern Greek has been mistakenly grouped with other strict NC languages such as Romanian or Czech (chapter 2). I claimed that this class of *ou*-words behaves differently from 'regular' n-words with strict NC properties in that it characteristically displays non-strict NC properties. Following a discussion of these *ou*-elements and their relation to 'regular' n-words (negative elements with strict NC properties), I turned to the particle *oute* which is ambiguous between an additive and a scalar interpretation. I pointed out how the distribution of this particle poses a challenge for extant theories of NC. The discussion was extended to another language with hybrid properties on NC, Hungarian.

Next, I demonstrated that a prominent syntactic theory of NC, Zeijlstra's, although very successful in its account of strict and non-strict languages, faces problems with hybrid languages. I provided evidence that challenge the main claim of the analysis, namely that the difference between strict and non-strict NCLs should be attributed to the different status of the NMs. It was seen that the distribution of NMs with preverbal n-words depends on the morphosemantic properties of n-words. Some complications related to quantification and the distribution of NMs in elliptical answers led to the claim that the difference between strict and non-strict NCLs should not be attributed to a semantic difference of the NMs, but rather to the properties of n-words.

In chapter 4, I presented a theory of NC based on the idea propagated by Zeijlstra (2004) that NC is syntactic Agreement. But my account also deviated from Zeijlstra in important ways. To begin with, the proposed system is binary in that the probe and the goal need to satisfy a [uF] or [unval] feature in negative dependencies. I have argued that semantic interpretability and feature interpretability are two distinct properties. This assumption results in a new taxonomy of negative elements, and in which the NC phenomenon receives an account based on the combination of two features, the semantic feature [NEG] and the formal feature [val]. Elements with transparent *negative* morphology are considered as possible candidates for a [val] feature in hybrid NCLs. It is claimed that speakers attribute different values to the formal feature, but keep the semantic status of NMs and n-words constant. Based on this assumption, there is now no longer a sharp distinction between n-words and NMs, and consequently, there is no sharp distinction between strict and non-strict NCLs. This also removes the limitation on feature sets, both NMs and n-words may be specified by [val] or [unval] features, opening up the possibilities of hybrid languages. Overall, the crucial difference between strict and non-strict NC configurations does not derive from the properties of NMs, but from the different value of a formal syntactic feature on n-words.

One welcome result of the analysis is its flexibility to account not only for 'regular' NCLs, but also for hybrid ones. In addition, the system provides a way to model speaker variation within a language (i.e. Afrikaans), as well as differences between dialects (i.e. Northern dialects vs. standard Greek). Moreover, we can now account for the availability of a DN interpretation in non-strict NCLs and the ban on such readings in strict ones, an unresolved issue under previous accounts. Finally, it explains why a NM is always obligatory with preverbal elements in strict NCLs (Penka, 2011).

The current analysis has important implications for the mapping between morphology, semantics and syntax. Morphology is argued to interact with syntax; morphologically *transparent* elements are argued to have specific formal properties which *non-transparent* morphologically elements lack.

Another significant result is the insight that prosody plays a role in *Agree*, a new observation as far as I can judge.

The last two chapters of the thesis focused on the semantics of ambiguous particles already introduced in the discussion of NC. I started with the particle *oute*$_1$ arguing that it is an anaphoric element, the negative counterpart of English *too*. Turning to *oute*$_2$, which is one of the Greek manifestations of EVEN and related items (*esto, akomi ke/mehri ke, kan*), I presented evidence in support of a scope analysis of *EVEN*. Several conclusions were seen to be best compatible with the data. First, I argued that *esto* comes in two homophonous versions: one which corresponds to *even* in DE environments, (*esto* (*ke*)), and another (*esto* (**ke*)), which behaves similarly to English concessive *at least*. In addition, I showed that the particle *kan*, a particle used for *even* in negative environments, should be analyzed as a minimizer. Then I argued against the widely held view that the particles *akomi ke* and *mehri ke* in positive episodic sentences are in free distribution. I related their differences to the different nature of these particles: *akomi* is temporal, while *mehri* is spatial. Although I have tried to give a precise descriptive characterization of the phenomenon, it is left open for future research how the observed subtle differences among these particles can be explained.

In the last chapter (chapter 7), which set out with a discussion of the ambiguous particles *at least* in English and *tulachiston* in Greek, I addressed the question whether there is a relation between epistemic and concessive elements and what kind of relation this is. Applying aspects of Nouwen (2010, 2015), I showed that the Greek epistemic superlative modifier, *to ligotero*, behaves like a regular superlative class B element, while the superlative particle *tulachiston* is morphologically a class B element, but also has class A properties. This discrepancy remains puzzling for Nouwen's analysis.

Next, it was demonstrated that Bobaljik's (2012) more fine-grained distinction between transparent and opaque superlatives offers a solution to this dilemma. In particular, it became possible to identify some additional differences which eventually led to a reclassification of *tulachiston* and *to ligotero*. It was suggested, following Bobaljik that *tulachiston* is an elative form

containing a special morpheme of comparison. I proposed that *tulachiston* and elatives in general should be analyzed as weakened forms of regular superlatives (Sapir, 1985), such that they entail some type of comparison. In this way, Nouwen's class A could be extended to include not only comparative elements (i.e. *more than*/*less than*), but also elatives. Finally, I have proposed to give a common treatment to elatives, concessive elements and optatives arguing that these share the same semantics regarding the scale they trigger. This assumption can explain why the same element (i.e. *tulachiston*) figures in all three constructions and why true superlative elements, such as *to ligotero* are banned.

What can be concluded from the deliberations above is that any theory needs to be flexible enough, so as to account for properties of elements with hybrid properties, either negative words or superlative particles (i.e. *tulachiston*).

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Appendix I

(1) O Janis dhen ipe oute kan mia leksi
the Janis NM said oute kan a word
'Janis didn't say even a word'

(2) Oute enas mathitis dhen irthe stin ekdilosi
oute a student NM came to.the party
'Not even a single student came to the party'

(3) Oute kan i Maria irthe
oute kan the Maria came
'Even Maria didn't come'

(4) Oute ena biskoto efage
oute a biscuit ate
'(S)he didn't even eat a cookie'

(5) Oute kan ti Maria proskalese o pritanis
oute kan the Maria invited the dean
'The dean didn't invite even Maria'

(6) Oute enas mathitis irthe stin ekdilosi
oute a student came to.the party
'Not even a single student came to the party'

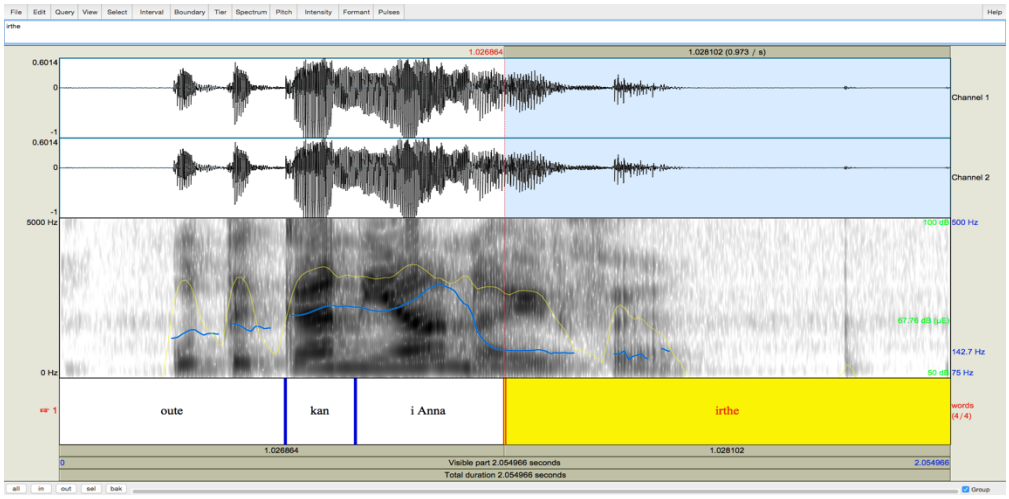
(7) *Oudhepote dhen ipe psemata
n-ever NM said lies
'(S)he never lied'

(8) Oudhepote rotise kati
n-ever asked n-thing
'(S)he never asked anything'

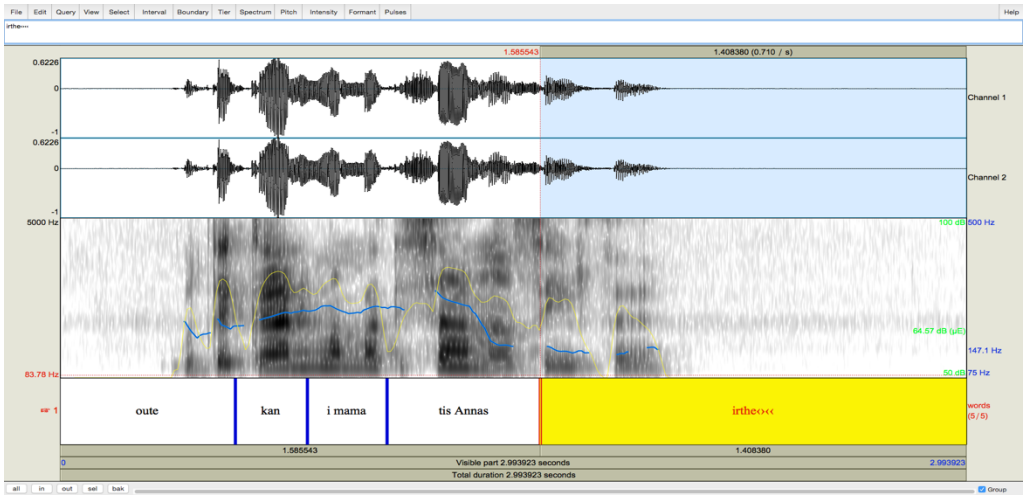
(9) Dhen akoui. Oute dhehete simvoules apo kanenan
NM listens. Oute accepts advices from anyone
‘(S)he doesn't listen. Neither does (s)he accept any advice from anyone’

Appendix II

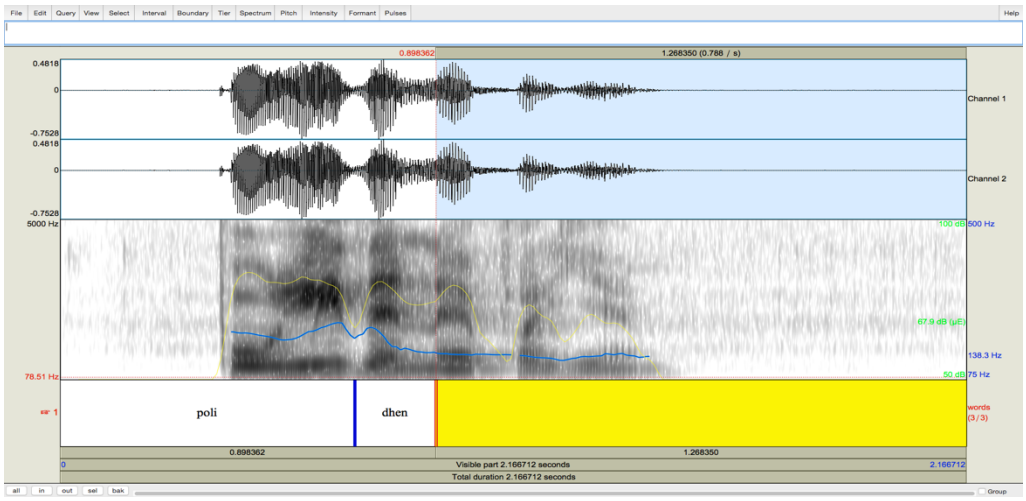
(1) Oute kan i Anna irthe
oute kan the Anna came
‘Even Anna did not come’



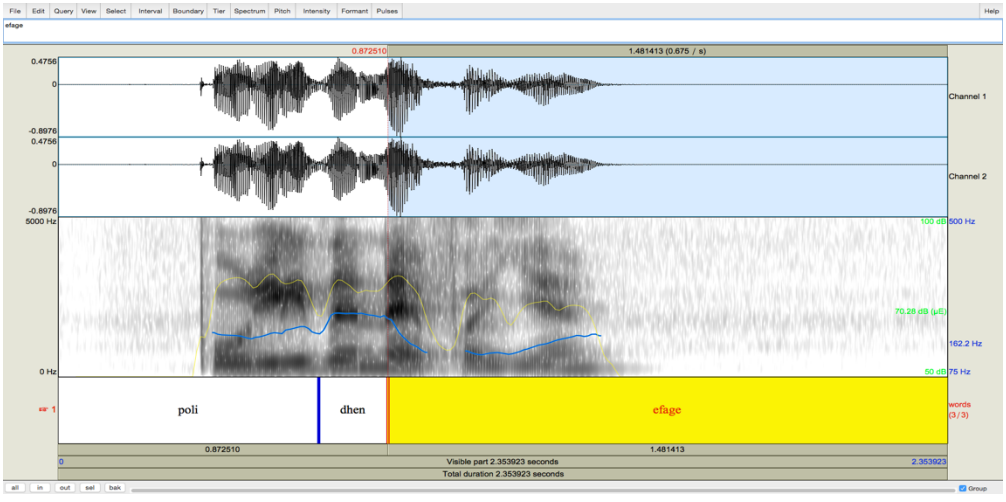
(2) Oute kan i mama tis Annas irthe
oute kan the mother the Anna came
‘Not even Anna's mother came’



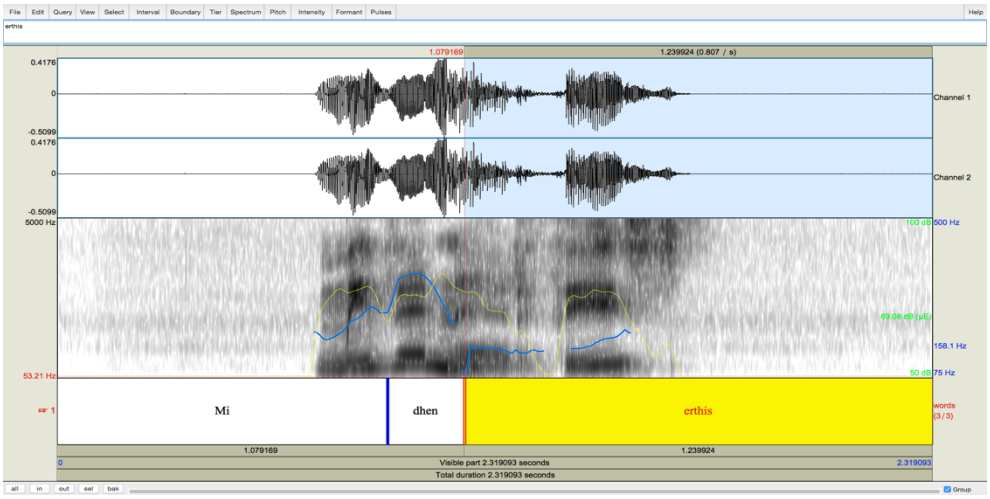
(3) Poli dhen efage
much NM ate
‘There is much that (s)he didn't eat’



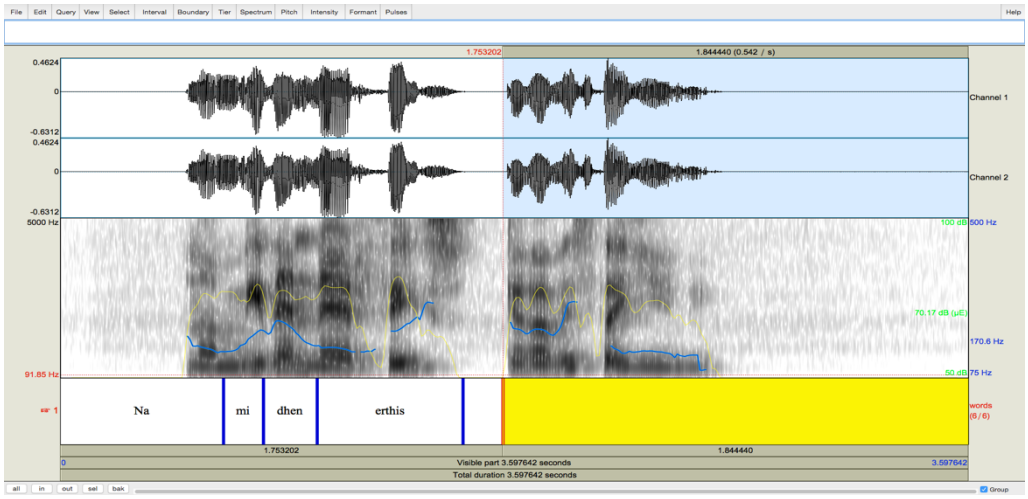
(4) Poli dhen efage
much NM ate
‘(S)he didn't eat much’



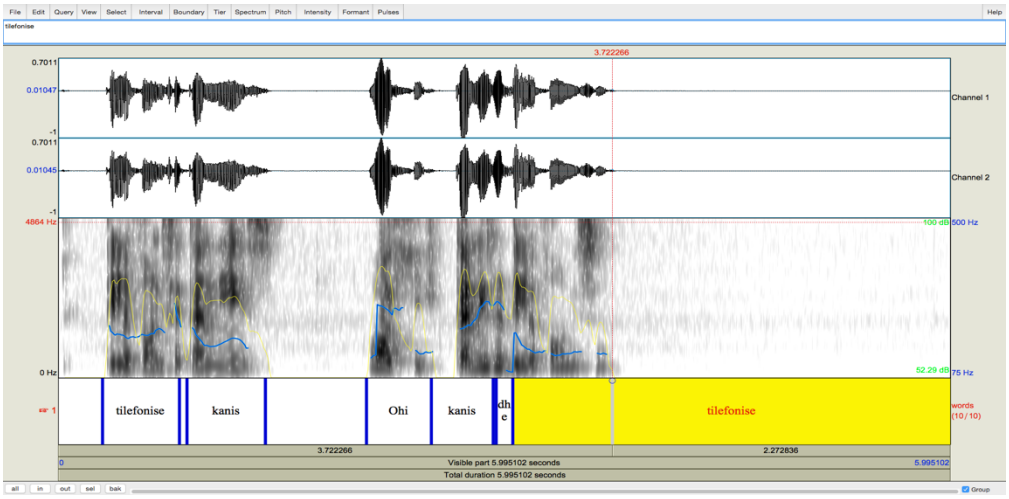
(5) Mi dhen erthis
NM NM come
‘Do not dare not to come’



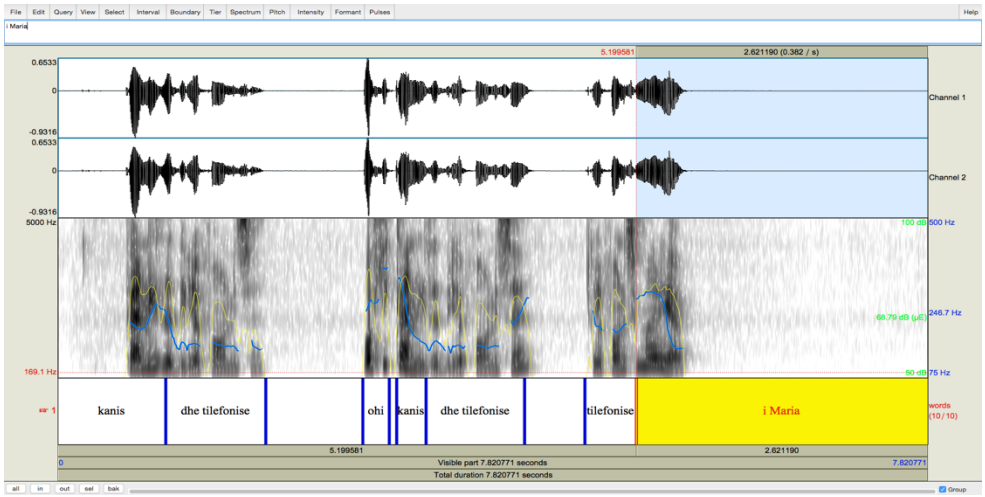
(6) Na mi dhen erthis
PRT NM NM come
‘If you don't come...’



(7) Ohi kanis dhen tilefonise
NM n-body NM called
‘No. Nobody called’

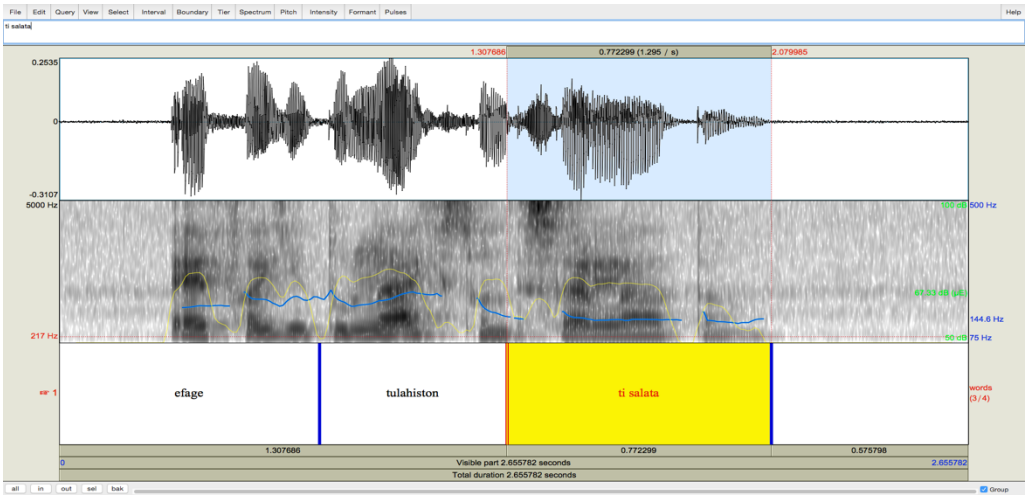


(8) A: Kanis dhe tilefonise
n-body NM called
‘Nobody called’
B: Ohi kanis dhen tilefonise. Tilefonise i Maria
NM n-body NM called. called the Maria
‘It is not the case that nobody called. Maria called’

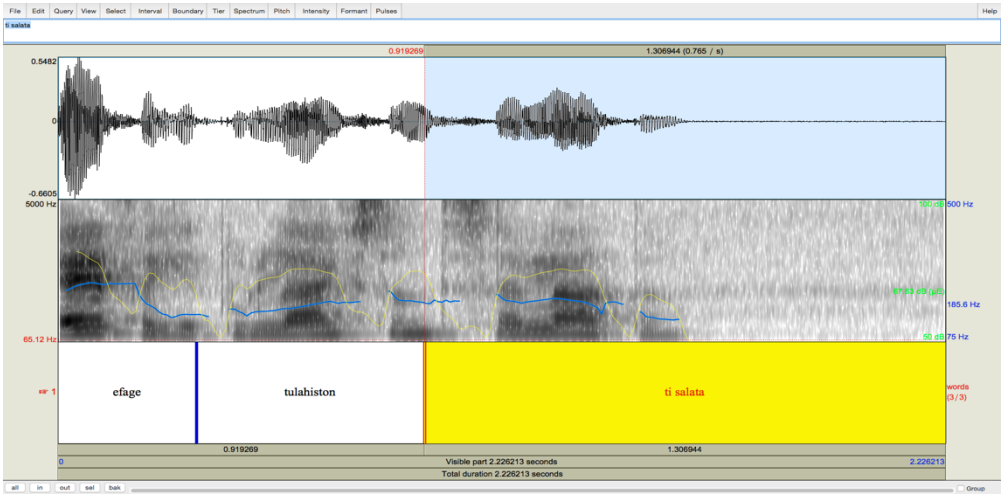


Appendix III

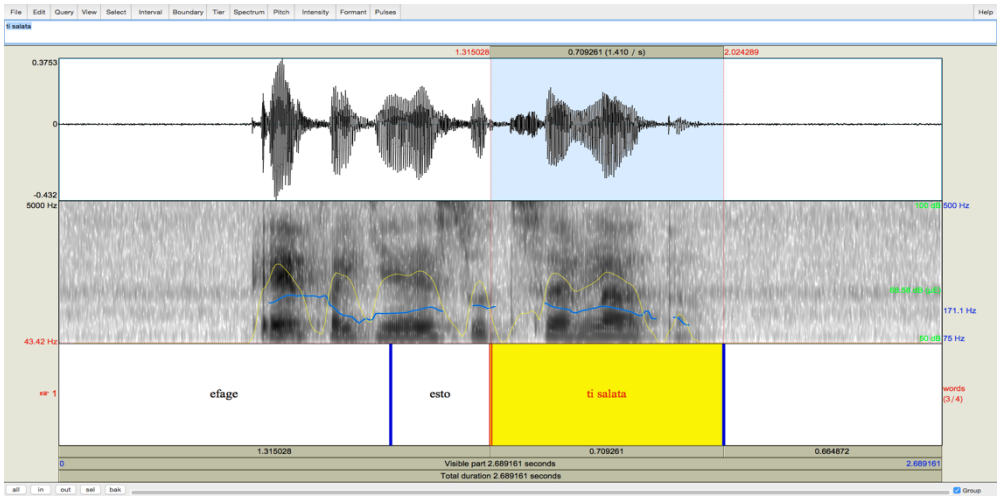
(1) Efage tulachiston ti salata
ate tulachiston the salad
‘(S)he ate at least the salad’



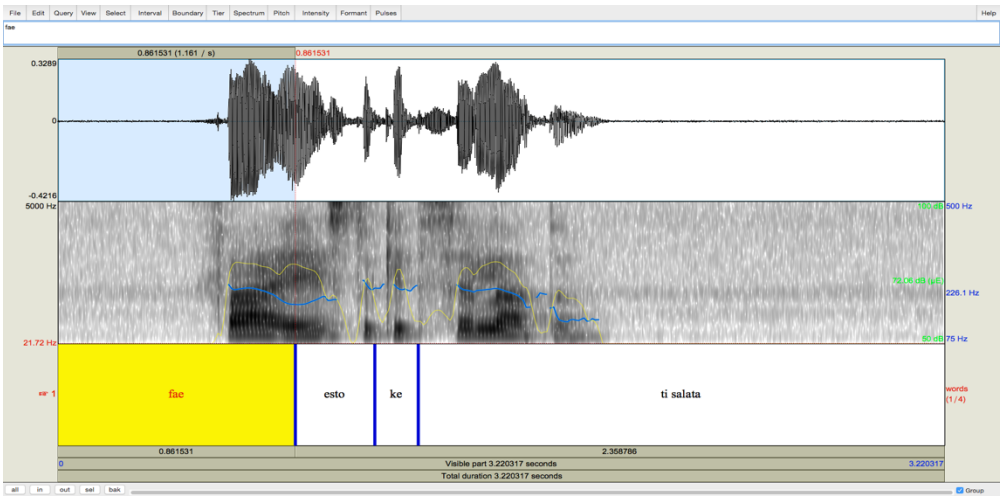
(2) Efage tulachiston ti salata
ate tulachiston the salad
‘At least, (s)he ate the salad’



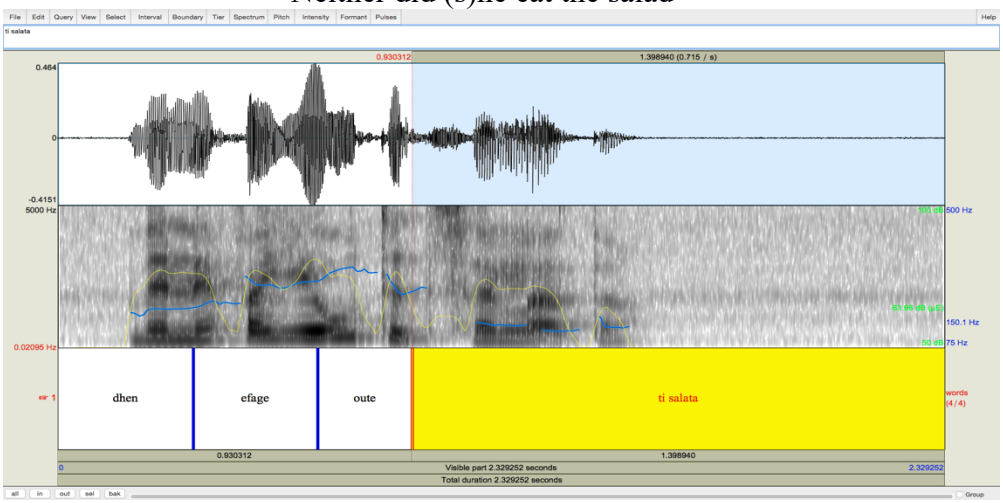
(3) Efage esto ti salata
ate esto the salad
‘(S)he ate at least the salad’



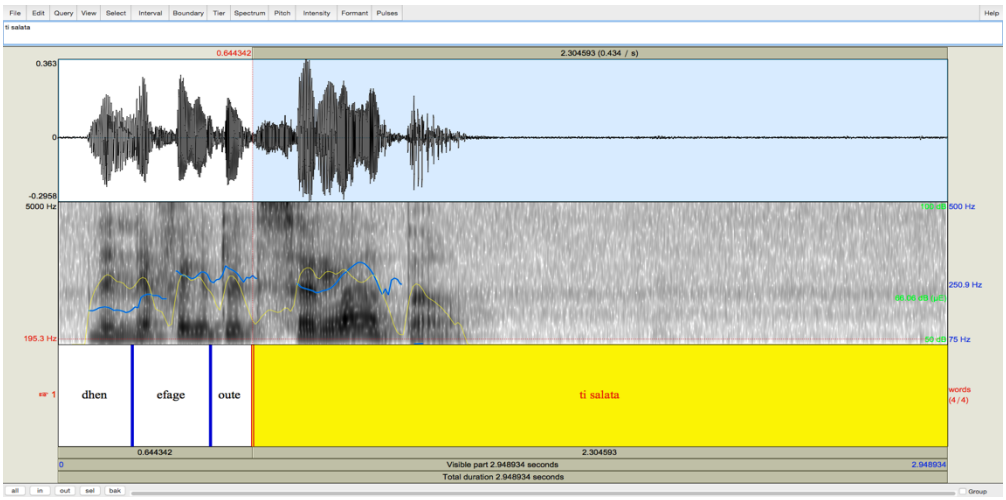
(4) Fae esto ke ti salata
eat esto ke the salad
‘Eat at least the salad’



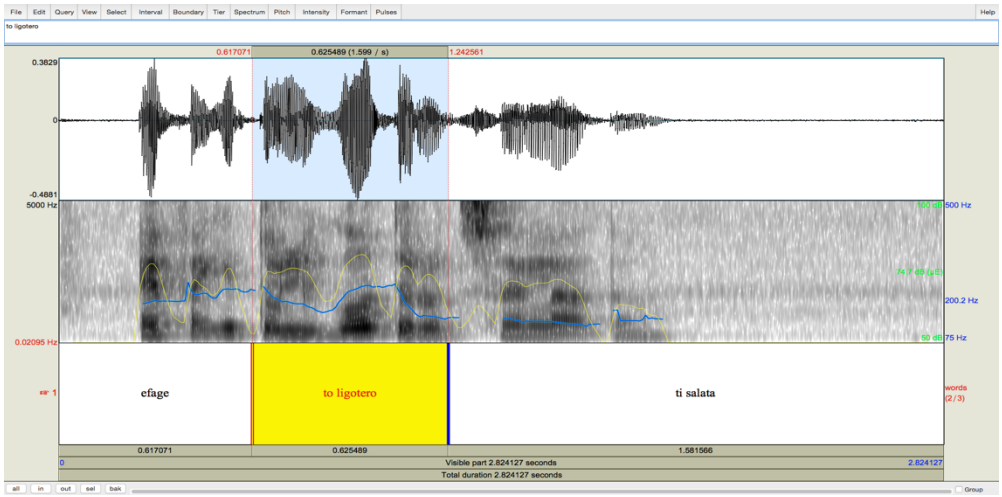
(5) Dhen efage oute ti salata
NM ate oute the salad
‘Neither did (s)he eat the salad’



(6) Dhen efage oute ti salata
NM ate oute the salad
‘(S)he didn't even eat the salad’



(7) Efage to ligotero ti salata
ate to ligogero the salad
‘(S)he ate at least the salad’



(8) Oute to fagito, oute ti salata efage
oute the food oute the salad ate
‘(S)he didn't eat either the main dish or the salad’