Sentential negation and negative concord
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9 Conclusions

In this chapter I will briefly list the main conclusions that have been put forward in the previous chapters. In chapter 1, I introduced a series of questions that required an empirical and a theoretical analysis. These questions concerned four different phenomena in the study of negation:

- The way sentential negation is expressed in different languages;
- The way multiple negation is interpreted in different languages;
- The ban on true negative imperatives in several languages;
- The interpretation of constructions in which an $\forall$-subject precedes a negative marker;

In chapter 1, I put forward two different types of questions: empirical questions and theoretical questions. The empirical questions concern first the exact behaviour of the above-mentioned topics and the correspondences between these topics, i.e. to what extent these topics are correlated.

The theoretical questions are raised in order to provide an explanation for the observed phenomena and their correspondences.

9.1 Empirical results

The empirical results of the study of the correlations is based on threefold empirical domains: Dutch diachronic variation, Dutch dialectological variation (267 varieties have been investigated) and a sample of 25 other languages. The results can be summarised as follows:

- the set of Non-Strict NC languages is a strict subset of the set of languages that ban true negative imperatives;
- the set of languages that ban true negative imperatives is a strict subset of the set of languages that express sentential negation by means of a negative head (i.e. Jespersen Phase I-IV and Phase VI languages);
- the set of languages that express sentential negation by means of a negative head is a strict subset of the set of NC languages;
- the set of NC languages is a strict subset of the set of languages in which constructions in which an $\forall$-subject precedes the negative marker can be assigned a reverse interpretation (with respect to the subject and the negation).

The results are also summarised in the Venn diagram in (1). Note that all correspondences between the investigated phenomena are unidirectional and give rise to typological implications. These typological implications will not be considered as typological primitives, but they are predicted by the theory of sentential negation and
NC that I have presented, based on a syntactic analysis of negative markers and a semantic analysis of n-words.

(1) Venn diagram containing all studied languages

- Set of studied languages:
  - Standard Dutch

- The set of languages that allow for an inverse reading when an $\forall$-subject precedes the negative marker:
  - German, Swedish, Norwegian

- The set of NC languages:
  - Quebecois, Bavarian, Yiddish

- The set of languages that exhibit sentential negation by means of a preverbal negative marker (Jespersen Phase I-IV; VI):
  - Czech, Russian, Polish, Serbo-Croatian
  - Berber

- The set of languages that ban true negative imperatives:
  - Greek, Romanian, Hungarian
  - Hebrew, Catalan (I/II), St. French, Coll. French, English (A/B)

- The set of Non-Strict NC languages:
  - Italian, Spanish, Portuguese
9.2 Theoretical results

In chapter 6, I have examined the syntactic status of negative markers. Negative markers come about in different forms: as preverbal, phonologically strong particles (such as Italian non), as clitic-like or affixal elements (such as Czech ne) or as negative adverbs (such as Dutch niet).

I have shown that the first two kinds of negative markers are syntactic heads (X°), whereas negative adverbs are syntactic phrases (XP) (cf. Zanuttini 1998). As a result of this, negative head markers are able to project. All negative head markers are associated to the head position (Neg°) of a particular negative projection NegP. Consequently, all languages that exhibit a negative head marker also exhibit NegP in negative expressions. Two different kinds of languages with respect to the position of the negative head can be distinguished: languages in which the negative marker is base-generated in Neg° and languages in which negative markers are base-generated at some position attached to the Vfin (either by head adjunction or as part of the verbal inflectional morphology).

Negative specifiers cannot project a negative projection NegP. However, the presence of negative specifiers does not exclude an abstract realisation of Neg°. Therefore this analysis of the syntax of negation predicts two types of languages with a negative specifier only: languages in which this specifier is in Spec,NegP (headed by an abstract Neg°) and languages in which there is no Spec,NegP position available. In the latter case the negative marker is located in a vP adjunct position.

In chapter 6, I also argue that negative markers are the realisation of negative formal features. Formal features come about as either interpretable or uninterpretable. Elements carrying an uninterpretable feature [uNEG] need to check this feature against an element that carries [iNEG]. As all negative head markers that are base-generated in the verbal domain stand in an Agree relation with Neg° or move to Neg°, and given that these syntactic operations can only be triggered by feature checking, negative head markers are the realisation of an uninterpretable [uNEG] feature. Negative heads that are base-generated in Neg° are not necessarily the realisation of [uNEG] but may also be the realisation of [iNEG] (i.e. they are interpreted as negative operators) as they have not been subject to Agree or Move.

Following the assumption that the order of functional categories in the clause is semantically driven (cf. Nilsen 2003) and assuming that sentential negation is binding event variables under negation (following Acquaviva 1995, Giannakidou 1997) (assuming that these event variables are introduced by the highest head in the verbal domain (presumably v°)), the location of NegP is such that it should at least dominate vP. In some languages this position may even be higher (following Ramchand 2001).

In chapter 7, I have focused on the semantics of n-words evaluating different proposals that have been formulated in the last 14 years. Three different kinds of proposals have been formulated. First, proposals arguing that n-words are negative quantifiers that are subject to resumptive quantification, and therefore melt together into one large negative quantifier binding multiple variables (Zanuttini 1991,
I have discussed various arguments that run against such an analysis, and I conclude that n-words are not negative quantifiers.

Second, I have evaluated two proposals (Ladusaw 1992, Giannakidou 2000) that take n-words to be non-negative NPI's that are licensed by an abstract negative operator. I have argued that the observation that n-words are non-negative is correct, but that n-words crucially differ from NPI's, in the sense that n-words are not licensed by proper semantic contexts (namely anti-veridical contexts), but that they are licensed by a syntactic feature checking mechanism.

Third, I have discussed two papers (Van der Wouden 1994a and Herburger 2001) that described n-words as being ambiguous between negative quantifiers and NPI's and I have provided several arguments that show that this approach faces problems as well. I conclude that the approach that takes n-words as non-negative elements that are syntactically marked for negation, is to be preferred.

Finally, I have discussed the quantificational status of n-words and I have argued that n-words should not be considered as quantifiers, but as indefinites (as in Heim 1982) that introduce a free variable that is bound under existential closure. This leads to the following syntactic and semantic representation for n-words:

\[ [n-Q] = \lambda P. [Q(x) \& P(x)]_{u\text{NEG}}, \text{whereby } Q \in \{\text{Person}', \text{Thing}', \ldots \} \]

In chapter 8, I have combined the results from chapter 6 and 7. From the analysis in chapter 6 it follows that languages that have a [uNEG] feature at their disposal may project a NegP. As n-words also carry [uNEG] this means that every language that has NC is able to project NegP. Hence the difference between NC and DN languages can be reduced to the availability of a [uNEG] feature. In languages with a [uNEG] feature, (sentential) negation is a form of syntactic agreement, driven by a feature checking mechanism; in languages without a [uNEG] feature every negative element carries [iNEG] and will be interpreted as a negative operator at LF. The latter languages exhibit DN, where there is no NegP present and negative agreement is impossible.

Thus, sentential negation can either be expressed by means of semantic negation (1) or syntactic negation (2) and languages vary diachronically and synchronically with respect to these means.

(3) Semantic negation: every negative element corresponds 1:1 to a negative operator.

(4) Syntactic negation: negative elements mark the presence of a (c)overt negative operator.

I have argued that in NC languages all negative elements are licensed by a negative operator $Op_\ldots$ that carries [iNEG]. Being an adverbiaal operator, this negative operator does not only introduce the Boolean negation, but it is also able to introduce existential closure. Hence this negative operator, translated as (5), binds all free
variables that are introduced by the n-words, and the event variable that is introduced by $v^0$.

\[(5) \quad [[Op_{-}]] = -3\]

Adopting Haraiwa’s (2001) notion of multiple Agree, this single negative operator is able to license all negative elements carrying [uNEG] within its local domain. This explains a single NC reading.

I argue furthermore that the distinction between Strict and Non-Strict NC languages is the result of the interpretational status of the [NEG] feature on the negative marker: if the negative marker carries [uNEG] it should be bound by a higher abstract $Op_{-}$ that can also bind the preverbal subject n-word. In Non-Strict NC languages the negative marker carries [iNEG] and is therefore the highest element of an NC chain: no n-word is able to dominate this negative marker, since the free variable it introduces cannot be bound by the existential quantifier that the negative operator introduces.

I have shown in chapter 8 that many of the problems that other analyses face have been solved within this analysis or can be solved by adopting mechanisms that have been motivated independently.

In chapter 8, I also address the question how a language learner ‘knows’ whether a language has a [uNEG] feature. I propose a simple input-output learning mechanism in which the L1 learner connects an utterance to the discourse situation. If the LF that describes the situation contains one negation only, whereas the utterance itself consists of more than one negative element, the language learner analyses at least one of these negative elements as non-negative at LF. Such a negative element is assigned [uNEG]. If such utterances are absent there is no need for the L1 learner to assume the presence of [uNEG] features and these features will not become part of his/her grammar.

From this theory of sentential negation and Negative Concord the typological results presented in (1) follow naturally:

In Non-Strict NC languages the negative marker is the phonological realisation of the negative operator. In order to express sentential negation it should bind the event variable in $v^0$ and therefore this negative marker should be base-generated in Neg$^0$.

Imperatives have been analysed as truncated syntactic structures that lack TP, but require movement of $V_{fin}$ from $v^0$ (below NegP) to Mood$^0$ (above NegP). If overt material occupies Neg$^0$, the Head Movement Constraint blocks the formation of such an imperative. Thus all languages that have their negative marker base-generated in Neg$^0$ ban true negative imperatives. This negative marker can either be [uNEG] (e.g. in Greek) or [iNEG] (as in Italian). As there are no negative head markers carrying [iNEG] that have not been base-generated in Neg$^0$, the set of Non-Strict NC languages is a strict subset of the set of languages that ban a true negative imperative.

Languages that ban true negative imperatives have their negative marker base-generated in Neg$^0$. Negative head markers are either base-generated in Neg$^0$ or in some position attached to $V_{fin}$. Consequently, the set of languages that ban true
negative imperatives forms a strict subset of the set of languages that have a negative head marker, i.e. that express negation by means of a preverbal negative marker. NC is available in languages that express sentential negation by means of syntactic negation, i.e. in languages in which negation may project. I show that this is the case in all languages that exhibit a [uNEG] feature. Languages with a preverbal negative head marker have [uNEG], but languages with a negative specifier only may also have a [uNEG] feature, as long as there is a proper cue for it in the L1 input. NC is such a cue. Hence, if a language exhibits NC, the language has a [uNEG] feature, which is able to project. In such languages there is both a Neg° position and a Spec,NegP position available to host a negative marker. However if a language lacks NC, there is no [uNEG] feature and thus no NegP. Then the negative marker may only occupy a vP adjunct position, and it follows that there is no DN language with a negative head marker. The set of languages with a negative head marker is a strict subset of the set of NC languages.

Finally, languages with a NegP are always higher than the subject that has been base-generated in Spec,vP (cf. Koopman & Sportiche 1991). As universal quantifiers cannot move across negation, sentences in which the negative marker follows an ∀-subject will in principle acquire a reading in which negation outscopes the subject. In non-NC languages this phenomenon is also possible, since negation is in principle base-generated in a higher position than the subject. However, if the negative operator is base-generated before merger with the subject (yielding predicate negation) and the subject merges to this negative predicate, the reading ∀>¬ is yielded. As non-NC languages may vary with respect to the preferred interpretation (whereas both are in principle possible) it follows that the set of NC languages is a strict subset of the set of languages, in which constructions where an ∀-subject precedes the negative marker can be assigned a reverse interpretation.

To conclude, the theory of sentential negation and Negative Concord that I present in this dissertation provides an explanation for all four phenomena that have been subject to this study; the theory is able to provide solutions for problems that other analyses have been facing; and finally, this theory predicts the typological implications that have surfaced in the empirical research.