Session VIII: Negation, N-Words, and Negative Concord

1. Negation

- Definition of Negation

(1) Negation transforms a given content into its complement:
e.g. true propositions $\rightarrow$ false propositions, property (set) $A \rightarrow$ property (set) $\overline{A}$, etc.

(2) a. John is running. $= 1$ iff John is running.
\[ \downarrow \]
   (true in all worlds in which John is running)

b. John is not running. $= 1$ iff it is not the case that John is running
\[ \downarrow \]
   (true in all worlds in which John is not running)

Formally: A negation operator $\text{NEG}$ attaches to a syntactic category $\alpha$, mapping the denotation of $\alpha$ onto its complement:

(3) $\text{[[NEG }\alpha\text{]]} = U \setminus \text{[[}\alpha\text{]]}$
   $(U = \text{the set of all denotations of the same type as } \text{[[}\alpha\text{]]})$

- Propositional negation:
  A standard kind of negation, well-known from standard logic, is propositional negation ‘$\neg$’, where $\text{NEG}$ takes a proposition-denoting expression in its scope, reverting its truth-value, cf. (2b).

(4) $\text{[[NEG]]} = \lambda p. \neg p$

$\rightarrow$ The propositional negation analysis is the standard analysis for syntactic negation operators. They are frequently taken to attach right above the smallest proposition-denoting element of the clause, i.e. right above VP (cf. e.g. Haegeman 1995).

(5) $[\text{TP... } [\text{NegP Neg [VP SUBJ V OBJ ]}]]$

- Other kinds of negation:
  Natural languages feature other kinds of negation, where the negation operator takes scope over elements of non-propositional type.

(6) Predicate negation (see as early as Aristotle’s syllogisms):
   a. friendly $= \{x \mid x \text{ is friendly}\} = A$
\[ \downarrow \]
   b. unfriendly $= \{x \mid x \text{ is not friendly}\} = \overline{A} = \text{the complement of } A$

- Q: Are there language that do not make use of propositional negation at all?
  Candidate languages? $\rightarrow$ Languages where the negation operator is a verbal suffix?

(7) $[\text{TP... } [[\text{VP SUBJ [V+Neg] OBJ ]}]$

(8) Possible lexical entry for a predicate negation operator on transitive verbs:
$\text{[[NEG}_V\text{]]} = \lambda P_{\prec,<,\leq,\geq,\succ} \cdot \lambda x_{\prec,\leq,\geq,\succ} \cdot \lambda y_{\prec,\leq,\geq,\succ}. \neg P(x)(y)$
A sample of verb-affixing negation markers (see Jacobs 1991):

- Swahili

(9) watampenda → hawatampenda

'They will love him.' 'They will not love him.'

BUT: the Swahili verb form contains pronominal arguments and denotes a proposition; see SESSION I

- Japanese

(10) samu-katta → sanu-na-katta
cold-past cold-neg-past 'It was (not) cold.'

BUT: Japanese is head-final: [ … verb VP neg NegP] katta TP

- Mano (Niger-Kongo)

(11) ’n yídò → ^n yídò

'I know.' 'I don’t know.'

BUT: tonal change could also affect the entire proposition: [CP] + TONE

N-words, such as nobody, nothing, nowhere appear to be another source of negation:

b. I bought nothing.

2. Classical GQ-Analysis of N-Words: Negative existential quantifiers

N-words are commonly analysed as generative quantifiers, e.g. as negative existential quantifiers (see Zanuttini 1991 for an analysis of NEG as a universal quantifier):

(13) [[nobody]] = λP_{\text{eod}}. ¬∃x [person’(x) ∧ P(x)]

(14) [[nobody came]] = (λP_{\text{eod}}. ¬∃x [P(x)]) [λy. came’(y)]

= ¬∃x [came’(x)]

= 1 iff there is no individual x, such that x came

Consequences:

i. n-words are inherently negative

ii. Two structural ways to syntactically express the same semantic content in English, German etc.:

b. I bought nothing. = I did not buy anything.

The observed equivalence follows from the logical equivalence: ∃ = ¬∀¬

BUT: N-words show the syntactic and semantic characteristics of indefinite expressions: e.g., they are licensed in existential there-sentences: There is no beer in the fridge!
3. Arguments against the standard view (e.g. Penka 2005)

3.1 Negative Concord : N-words are not always semantically negative

• Negative Concord:
  
  In NC- languages, multiple negative expressions yield an interpretation with only one negation (e.g. Laka (1990), Zanuttini (1991) Haegeman (1995), Zeijlstra (2004))

(16) Gianni non ha visto nessuno. (Italian)
  Gianni neg has seen n-person
  ‘Gianni hasn’t seen anybody.’
  *‘Gianni hasn’t seen nobody.’ = ‘Gianni has seen somebody.’

(17) Nikt nie przeczytał tego artykułu. (Polish)
  n-person neg read-3SG.PAST this-GEN article-GEN
  ‘Nobody has read this paper.’
  *‘Nobody has not read this paper.’ = ‘Everybody has read this paper.’

• Non-Negative Concord languages (e.g. German, English):

(18) a. Niemand ist nicht gekommen.
    n-person is NEG come
    ‘Nobody hat not come.’ = ‘Everybody came.’
    *‘Nobody has come.’

b. Niemand hat nichts gekauft. (e.g. on the ’Butterfahrt’)
    n-person has n-thing bought
    ‘Nobody bought nothing.’ = ‘Everybody bought something.’
    *‘Nobody bought anything.’

• Dialectal and historical variation in one and the same language: e.g. German

(19) a. Keine Macht für niemand. (song title by “Ton, Steine, Scherben”)
    no power for n-person
    ‘No power for anybody.’
    * ‘No power for nobody.’ = ‘Some power for everybody.’

  Old High German & Middle High German: NC-languages, n-words occur obligatorily with negative clitic en, ne on the verb (e.g. Jäger 2005)

b. Inti in dougli ni-sprah ih ni-ouuiht
    and in dark NEG-spoke I NEG-something
    ‘and in the dark (hidden) I spoke not’ (OHG, Tatian, 300, 19)

• strict NC languages (Slavic, e.g. Polish):
  
  The n-word must be accompanied by the sentential negative marker, independently of the position of the n-word; cf. (17)
• **non-strict-NC languages** (Romance):
  
  Only postverbal n-words require the presence of the sentential negative marker, cf. (20a). A preverbal n-word plus a negative marker is ungrammatical, or at best yields a reading with double negation, cf. (20b):

  (20)  
  a.*((No)) vino nadie. (Spanish)  
  neg came n-person  
  ‘Nobody came.’  
  b. Nadie (*no) vino.  
  n-person neg came  
  ‘Nobody came.’

  → The n-word seems to contribute negation to the sentence in (20b), but not in (20a)!

• **Conclusion:**
  
  N-words are not always semantically negative.

  ⇒ unexpected under negative quantifier analysis!

• **Possible explanations:**
  
  i. N-words are always inherently negative (e.g. (20b)), but in some configurations, their negative meaning component is absorbed by a higher negative element (*polyadic quantification*, e.g. Zanuttini 1991, Haegeman 1995, de Swart & Sag 2002)

  → semantic variation ??

  ii. N-words are not inherently negative, but either NPI-elements (Laka 1990) or indefinite expressions that must be licensed or bound by a negation operator (Penka 2005, Zeijlstra 2004).

  → with preverbal n-words (20b), the negation operator must be abstract.

  → Further evidence for abstract negation operators comes form of scope splitting in German

3.2 **Scope Splitting**

• **Central Observation:**

  In some sentences containing n-words, the locus of negative interpretation and the locus of indefinite (i.e. existential) interpretation are not identical. A third operator is intervening in between the two alleged semantic components of n-words:

  (21)  
  Es braucht kein Arzt anwesend sein.  
  it must n-Det doctor present be  
  *‘It is required that there be no physician present.’ must > ¬ > ∃ (surface scope)  
  * ‘There is no physician who is required to be present.’ ¬ > ∃ > must (inverse scope)  
  ‘It is not required that there be a physician present.’ ¬ > must > ∃ (split scope)

  (22)  
  JE/der Student hat KEIN\ Auto.  
  every student has no car.  
  ‘It is not true that every student has a car.’ ¬ > ∀ > ∃
The existence of scope split interpretations can be accounted for by assuming abstract negative operators, which in German must be surface adjacent to the n-word.

alternative explanations of scope-splitting readings in terms of quantification over abstract objects or higher types (Geurts 1996, deSwart 2000) fail because they over-generate. They predict a scope-splitting reading for (23) as well:

(23) Ich habe kein Buch allen Studenten empfohlen.
‘There is no book that I recommended to every student.’

* ‘It is not true that for every student there is a book that I recommended to him.’

→ > ∀ > ∃ (split scope)

• Conclusion:
Negation is not interpreted in the position of the n-word
⇒ unexpected under negative quantifier analysis

3.3 Discourse-Anaphora

Under certain conditions (VPs containing an n-word as direct object plus additional material that can be focussed) n-words can serve as antecedents for pronouns in the subsequent discourse:

(23') Wer kein Fahrrad im Keller hat, hat es auf dem Balkon.

Q: What would es refer to if kein Fahrrad was an inherently negative existential expressions saying ‘there is no bike such that…’?


• Where do we stand?
Both NC-phenomena and the existence of scope splitting pose a challenge for the standard analysis of n-words as negative quantifiers
⇒ In contrast, the analysis of n-words as indefinite NPs containing negative agreement markers provides a unified account for the existence of negative concord and scope splitting with n-words and allows for a parallel treatment of n-words together with all other indefinite NPs.

• Analysis:

i. n-words are not semantically negative. Their meaning is the same as that of their positive pendant:

(24) [[nobody]] = [[somebody]] = λx ∈ D. x is a person

⇒ accounts for NC-readings with n-words in NC-constellations
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ii.  
n-words must be licensed by means of syntactic agreement (Zeijlstra 2004):  
n-words carry an un-interpretable feature [uNEG] that must be checked against an interpretable feature [iNEG] carried by a negative operator.

(25) Gianni non telefona a nessuno.            Italian  
          Gianni neg call to n-person  
          ‘Gianni does not call anybody.’

(26) \[
\text{Gianni \quad non}_{\text{NEG}} \quad \text{telefona a nesso}_{\text{NEG}}\]

\[\quad \]

(27) \[
\text{Gianni \quad \quad \quad \quad \quad} \quad \text{telefona a nesso}_{\text{NEG}}\]

⇒  
In (26), the sentential negation operator *non* has the feature [iNEG], which licenses the un-interpretable feature [uNEG] on the n-word.

iii.  
In NC-languages, the overt or covert negation operator can license more than one [uNEG]-feature under multiple agreement, cf. (30): MULTIPLE AGREEMENT

iv.  
Preverbal n-words are licensed by an abstract negative operator NEG, c-commanding the n-word:

          n-person call to Gianni  
          ‘Nobody calls Gianni.’

b. \[
\text{[ NEG}_{\text{NEG}}\quad \text{nesso}_{\text{NEG}} \quad \text{telefona a Gianni]}\]

⇒  
Presence of the abstract negative element is indicated by the presence of the n-word.

⇒  
Preverbal n-words that co-occur with an overt sentential negation marker lead to a double negation reading in non-strict NC languages, as there are two semantically negative elements in the clause.

(29) \[
\text{[ NEG}_{\text{NEG}} \quad \text{n-word}_{\text{NEG}} \quad \text{... non}_{\text{NEG}}]\]

v.  
The simple negative interpretation with preverbal n-words in strict NC languages (e.g. Polish, cf. (17)) follows if the preverbal NEG-marker is not semantically negative and carries a feature [uNEG] as well (Zeijlstra 2004).

(30) \[
\text{NEG}_{\text{NEG}} \quad \text{nikt}_{\text{NEG}} \quad \text{nie}_{\text{NEG}} \quad \text{przeczytał tego artykułu}\]

⇒  
semantic negation is always abstract in strict NC-languages

but:  
Why would the preverbal negation marker be present if it does not do anything semantically?
Cross-linguistic variation:

i. The difference between NC languages and non-NC languages has to do with the licensing capacities of the overt/covert negative operators; see also §5:
- NC-languages: multiple agreement, i.e. one negation operator can licence more than one n-word: simple negation
- non NC-languages: simple agreement, i.e. each negative operator can only licence one n-word: double negation in case of two n-words, which each come with their own negative licencer.

ii. The difference between strict and non-strict NC languages is reduced to the status of the overt negative marker in a language:
- non-strict NC languages: semantically negative
- strict NC languages: not semantically negative

Questions:

Q1: Does the analysis imply that the preverbal NEG-marker must always be licensed by an abstract negative operator in strict NC-languages? Zeijlstra (2004): yes

Q2: What triggers the presence of the preverbal NEG-marker with an un-interpretable feature in (30), if the abstract negative operator is indicated by the presence of the n-word?

Q3: What happens in simple negated sentences without n-word but with a preverbal NEG-marker in strict NC-languages ⇒ abstract negative operator?

⇒ the proposed analysis considerably complicates the picture for strict NC-languages!

An alternative?

Preverbal negative markers are semantically negative in both strict and non-strict NC languages, but the two groups of languages differ regarding the structural licensing conditions for un-interpretable neg-features on n-words:

i. non-strict NC languages: feature checking under strict c-command

ii. strict NC languages: no surface c-command required for feature checking (i.e. niet can be checked by negative marker nie in (30))

⇒ the different licensing conditions for un-interpretable feature may be correlated to another typological difference between Romance and Slavic: configurationality vs. discourse-configurationality

Q: Are there other differences between the two language groups, e.g. concerning the licensing of reflexive pronouns, semantic binding etc.?

Conclusion:

There are two strategies in natural language to express sentential negation:

i. negative markers directly encoding semantic negation;

ii. n-words marking the presence of a possibly abstract negation.
5. **NC vs Non-NC Languages**

- *Zeijlstra (2004): Genuine semantic variation in form of different denotations*
  
  i. NC languages: n-words denote indefinites that need to be licensed by (possibly abstract) negation operators
  
  ii. non-NC languages: n-words denote negative quantifiers, cf. (13)

**BUT:** n-words behave like indefinite NPs in non-NC languages, too, see above!

- *Penka (2005): Semantic variation follows from syntactic variation*

  N-words never denote negative quantifiers, but are always indefinite NPs with an uninterpretable neg-feature.

  i. NC languages: multiple agreement between $\text{neg}[i]$ and $\text{neg}[u]$ on n-words

  $\Rightarrow$ one negative operator can license more than one n-word

  ii. non-NC languages: no multiple agreement

  $\Rightarrow$ 1:1-ratio between n-words and negative operators, with even numbers of negative operators cancelling each other out.

(31) dass $\text{NEG}_{\text{INEG}} [\text{niemand}_{\text{uNEG}}] \text{NEG}_{\text{INEG}} [\text{kein}_{\text{uNEG}}] \text{Auto hat}]$

that n-person no car has

‘...that nobody has no car.’ = ‘that everybody has a car.’

6. **The wider perspective: Languages without n-words**

There is good cross-linguistic support for the analysis of n-words as plain indefinite NP with a negative agreement marker:

Many (African) languages do not have n-words, but express the relevant reading by putting the ordinary indefinite NP in the scope of sentential negation:

(34) a. *mutàanee bà sü tàfi kàasuwa ba* [HAUSA]

  people NEG 3pl go market NEG

  ‘People didn’t go to the market.’ = ‘Nobody went to the market.’

b. Muusaa bà-i kiraa àbookii liyaafa ba NEG >> ∃

  Musa NEG-3sg.SUBJ invite friend ceremony NEG

  ‘Musa didn’t invite any friend to the ceremony.’

Q: Is THIS the cross-linguistically unmarked pattern?

7. **Possible Research Topics**

- The system of negation in other languages (NC – non-NC, interpretation and distribution of n-words)

- Negation in languages with negative markers as verbal suffixes (e.g., do these languages have n-words, or not?)

- Alternative accounts for the different behaviour of n-words in Slavic (strict NC) and Romance (non-strict NC).