Adjectives and the Ban on Double Negation

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1 Introduction

1.1 Data set 1: morphological negation

▷ positive gradable adjectives may be prefixed with un- (1a)
▷ negative gradable adjectives cannot be prefixed with un- (1b)
▷ negative adjectives are not resistant to negation per se (1c)
(1)  a. unhappy  b. *unsad  c. not sad
    unwise  *unstupid  not stupid
    unclean  *undirty  not dirty
    unhealthy  *unsick  not sick
    unkind  *unrude  not rude
    untrue  *unfalse  not false
    uneasy  *undifficult  not difficult

▷ the observation dates back to Jespersen (1942: 466), Zimmer (1964), Horn (1989).
▷ corpus data support these judgments:
  ◦ British National Corpus (BNC; 100m words)
  ◦ Corpus of Contemporary American English (COCA; 450m words)
  ◦ the figures give the number of occurrences (BNC/COCA)

<table>
<thead>
<tr>
<th></th>
<th>PosA</th>
<th>NegA</th>
</tr>
</thead>
<tbody>
<tr>
<td>wise-foolish</td>
<td>wise</td>
<td>foolish</td>
</tr>
<tr>
<td></td>
<td>2,118/10,018</td>
<td>1,088/4,406</td>
</tr>
<tr>
<td>happy-sad</td>
<td>happy</td>
<td>sad</td>
</tr>
<tr>
<td></td>
<td>11,166/55,400</td>
<td>3,241/17,549</td>
</tr>
<tr>
<td>kind-rude</td>
<td>kind</td>
<td>rude</td>
</tr>
<tr>
<td></td>
<td>23,349/1,855,404</td>
<td>942/3,386</td>
</tr>
<tr>
<td>true-false</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td></td>
<td>17,577/90,165</td>
<td>3,529/14,944</td>
</tr>
<tr>
<td>easy-difficult</td>
<td>easy</td>
<td>difficult</td>
</tr>
<tr>
<td></td>
<td>14,143/65,942</td>
<td>21,433/72,543</td>
</tr>
</tbody>
</table>

▷ on closer scrutiny, the pattern turns out to be more general, in that multiple negative affixes are ruled out in general:

(2)  breathless  *unbreathless  not breathless
    senseless  *unsenseless  not senseless
    useless  *unsenseless  not useless
    merciless  *unmerciless  not merciless
    cheerless  *uncheerless  not cheerless

▷ these cases contrast minimally with positive noun-derived adjectives ending in -ful:
successful unsuccessful not successful
lawful unlawful not lawful
eventful uneventful not eventful
helpful unhelpful not helpful
faithful unfaithful not faithful

*undishonest not dishonest
*undiscourteous not discourteous
*undisloyal not disloyal
*undiscomfortable not uncomfortable

*unimpossible not impossible
*unillogical not illogical
*ununhappy not unhappy
*disdishonest not dishonest

▷ in sum, we observe the following restrictions on morphological negation:
  ◦ *un + negative adjective
  ◦ *un + less
  ◦ *un + dis
  ◦ *un + in
  ◦ *un + un
  ◦ *dis + dis
▷ preliminary generalisation: negative morphemes cannot be stacked.

▷ although the first of these restrictions was noted a long time ago, it has defied a principled explanation so far.
▷ the best that is on offer is the Zimmer/Horn-generalisation:

(6) a. Negative affixes are not used with adjectival stems that have a ‘negative’ value (Zimmer 1964: 15)
   b. The stem to which a relatively nonproductive negative affix can attach tends to be an UNMARKED, WEAK POSITIVE scalar value (Horn 1989: 286)

▷ three reasons why the Z/H-generalisation is inadequate:
  1. it's a generalisation, not an explanation.
  2. can it be coincidence that negative morphemes cannot be negated? Of all the possible co-occurrence restrictions on affixes, why this particular one?
3. It’s empirically inadequate, in that we shall show that it can be observed with syntactic as well as morphological negation.

1.2 Our claim

The (cartographic) literature presupposes a constraint like the following on admissible functional sequences:

(7) *<X, X>

The functional sequence must not contain two immediately consecutive identical features.

e.g.:
- C does not select CP
- T does not select TP
- AgrS does not select AgrSP
- D does not select DP
- etc.

Main claim and proposal:

- the constraint in (7) explains the restrictions in the domain of negative morphemes discussed in section 1.1.
- negative morphemes have internal structure; this structure contains a Neg-feature.
- the analysis crucially relies on the nanosyntactic assumption of phrasal spellout: negative morphemes are the phrasal spellout of a node that dominates a Neg-feature.

2 Prerequisites for the Analysis

2.1 General background assumptions

- the syntax works with features.
- the lexicon is postsyntactic.
- words pair syntactic features with a phonology.
- phrasal spellout: words spell out syntactic phrases, i.e. collections of features.
- lexical insertion is subject to the Superset Principle (Starke 2009, Caha 2009) and the Elsewhere Principle (Kiparsky 1973).
(8) **Superset Principle**
A lexical entry may spell out a syntactic node iff the features of the lexical entry are a superset of the features dominated by the syntactic node.

(9) **The Elsewhere Principle**
In case two rules, $R_1$ and $R_2$, can apply in an environment $E$, $R_1$ takes precedence over $R_2$ if it applies in a proper subset of environments compared to $R_2$.

### 2.2 The feature structure of adjectives

▷ what is the internal structure of adjectives?
▷ there is a (partial) fseq of features: $<$Neg, Q, a, $\sqrt{\cdot}$>
  - $\sqrt{\cdot}$: a root feature (a dimension)
  - $a$: a categorial head feature
  - Q: contributes gradability (an ordering $<$ on a scale)
  - Neg: a negation feature (scale reverser: reverses the ordering of the scale of the adjective)

```
NegP $\Rightarrow$ negative gradable adjective (e.g. sad)
NegQP $\Rightarrow$ positive gradable adjective (e.g. happy)
QaP $\Rightarrow$ nongradable adjective (e.g. nuclear)
```

▷ derivation (irrelevant steps omitted):
  - syntax merges QP, consults the lexicon, and finds any gradable adjective
  - negative gradable adjectives are possible spellouts (because of the *Superset Principle*), but they lose the competition from positive ones because they have an extra Neg feature.
  - positive gradable adjectives are all in a tie with respect to the *Elsewhere Principle*: as a result, they can all spell out QP (cf. De Belder 2011).
  - optionally, syntax may merge NegP, consult the lexicon, and find any negative gradable adjective; since they are all in a tie, any one may get inserted.
2.3 Un-prefixed positive gradable adjectives

▷ the un-prefix spells out a Neg-feature and a Q-feature (De Clercq 2013):

(11) < /An/, [NegP Neg [QP Q]] >

▷ an argument for the presence of Q in un- concerns the fact that un- makes gradable adjectives (Zimmer 1964: 33):

(12) non-christian ‘(not) related to, pertaining to, characteristic of certain religious doctrines’
un-christian ‘a scale of conformity or opposition to certain norms’

(13) |       | non-A        | un-A          |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>non-American</td>
<td>unamerican</td>
</tr>
<tr>
<td>grammatical</td>
<td>nongrammatical</td>
<td>ungrammatical</td>
</tr>
<tr>
<td>Cartesian</td>
<td>non-Cartesian</td>
<td>un-Cartesian</td>
</tr>
<tr>
<td>maternal</td>
<td>nonmaternal</td>
<td>unmaternal</td>
</tr>
<tr>
<td>motherly</td>
<td>??nonmotherly</td>
<td>unmotherly</td>
</tr>
</tbody>
</table>

(14) a. The blood found in the closet was nonhuman/*inhuman.
b. Their behaviour was inhuman/*nonhuman to the extreme.

(15) a. This sentence is more ungrammatical than that one.
b. *This sentence is more nongrammatical than that one.

▷ un- is a scalar negator

![Diagram]

(16)

▷ derivation:
  ○ happy spells out QP in the usual way.
  ○ in a parallel derivation, a complex specifier (NegP_un) is created, which spells out as un-.
  ○ this NegP_un is merged in the Spec of a Neg-head dominating the QP of
happy, creating the structure in (16).

3 The analysis

▷ the ungrammatical cases violate the restriction on the $f_{seq}$ in (7).

3.1 Un-prefixed negative gradable adjectives

▷ both sad and un- spell out a Neg feature:

```
\[
\begin{array}{c}
\text{NegP} \\
\text{un-} \Leftarrow \text{NegP} \text{un} \\
\text{Neg} \\
\text{QP} \\
\text{Q} \\
\text{Neg'} \\
\text{Neg} \\
\text{QP} \\
\text{Q} \\
\text{aP}
\end{array}
\]
```

(17)

▷ derivation:

○ sad spells out NegP in the usual way.

○ in a parallel derivation, a complex specifier (NegP_{un}) is created, which spells out as un-.

○ merging this NegP_{un} as a specifier requires the introduction of another Neg-head.

▷ the tree in (17) violates the restriction in (7), since we now have a sequence <Neg, Neg, Q>.

3.2 Un-prefixed derived negative gradable adjectives

▷ the feature set of -less reflects the fact that -less derives negative gradable adjectives (i.e. Neg, Q, and a, respectively).

```
\langle lws, [Neg \text{QP Q [aP a]]} \rangle
```

(18)
the tree of *unuseless:

(19)

not shown here: nP moves into SpecNegP to derive the suffixal nature of -less
(19) has the same violation of (7) as unsad in (17): <Neg, Neg, Q, a>
a similar analysis applies to a case like *undishonest:

(20)

the restrictions on morphological negation discussed in section 1.1 are accounted for in a principled manner by the restriction on the $f_{seq}$ in (7).
4 Additional support

4.1 Data set 2: syntactic negation

▷ the Dutch adjetival modifier weinig ‘little’ shows exactly the same restriction as the negative prefix un- in not combining with negative adjectives:

(21) a. weinig actief/*passief
   little active/passive
b. weinig gezond/*ziek
   little healthy/sick
c. weinig correct/*fout
   little correct/wrong
d. weinig verstandig/*dom
   little clear/confused
e. weinig interessant/*saai
   little interesting/boring
f. weinig duidelijk/*verward
   little clear/confused

▷ this restriction extends to weinig + derived negative adjective, i.e. adjectives derived with:
   ◦ the negative prefix on- ‘un’ (see (22)).
   ◦ the negative suffix -loos ‘less’ (see (23)).

(22) a. weinig geloofwaardig/*ongeloofwaardig
   little credible/unbelievable
b. weinig verstandig/*onverstandig
   little intelligent/unintelligent
c. weinig aantrekkelijk/*onaantrekkelijk
   little attractive/unattractive
d. weinig duidelijk/*onduidelijk
   little clear/unclear
e. weinig zichtbaar/*onzichtbaar
   little visible/invisible
f. weinig geduldig/*ongeduldig
   ‘little patient/impatient’

▷ the noun-derived adjectives with the positive suffixes -vol ‘-ful’ or -rijk ‘-rich’ in (23) contrast minimally with the negative adjectives in (24): the positive
ones are modifiable by *weinig* ‘little’, the negative ones are not.

(23) a. *weinig berouwvol*
    little remorseful
b. *weinig begripvol*
    little understanding
c. *weinig hoopvol*
    little hopeful
d. *weinig succesvol*
    little successful
e. *weinig belangrijk*
    little important

(24) a. *weinig ademloos*
    little breathless
b. *weinig zinloos*
    little senseless
c. *weinig genadeloos*
    little merciless
d. *weinig nutteloos*
    little useless
e. *weinig belangeloos*
    little disinterested

Table 2: *weinig + adjective* (CHN)

<table>
<thead>
<tr>
<th>weinig + PosA</th>
<th>weinig + onPosA</th>
<th>weinig + NegA</th>
</tr>
</thead>
<tbody>
<tr>
<td>aangenaam (11)</td>
<td>onaangenaam (0)</td>
<td>vervelend (1)</td>
</tr>
<tr>
<td>‘pleasant’</td>
<td>‘unpleasant’</td>
<td>‘annoying’</td>
</tr>
<tr>
<td>vriendelijk (9)</td>
<td>onvriendelijk (0)</td>
<td>vijandig (0)</td>
</tr>
<tr>
<td>‘friendly’</td>
<td>‘unfriendly’</td>
<td>‘hostile’</td>
</tr>
<tr>
<td>duidelijk (47)</td>
<td>onduidelijk (0)</td>
<td>verward (0)</td>
</tr>
<tr>
<td>‘clear’</td>
<td>‘unclear’</td>
<td>‘confused’</td>
</tr>
<tr>
<td>interessant (71)</td>
<td>oninteressant (0)</td>
<td>saai (0)</td>
</tr>
<tr>
<td>‘interesting’</td>
<td>‘uninteresting’</td>
<td>‘boring’</td>
</tr>
<tr>
<td>geloofwaardig (103)</td>
<td>ongeloofwaardig (0)</td>
<td>‘unbelievable’</td>
</tr>
<tr>
<td>‘credible’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>verstandig (7)</td>
<td>onverstandig (0)</td>
<td>dom (1)</td>
</tr>
<tr>
<td>‘intelligent’</td>
<td>‘unintelligent’</td>
<td>‘stupid’</td>
</tr>
<tr>
<td>aantrekkelijk (137)</td>
<td>onaantrekkelijk (0)</td>
<td>afstotelijk (0)</td>
</tr>
<tr>
<td>‘attractive’</td>
<td>‘unattractive’</td>
<td>‘hideous’</td>
</tr>
<tr>
<td>zichtbaar (110)</td>
<td>onzichtbaar (0)</td>
<td></td>
</tr>
<tr>
<td>‘visible’</td>
<td>‘invisible’</td>
<td></td>
</tr>
</tbody>
</table>
weinig + N-loos/-vol/-rijk (CHN)

<table>
<thead>
<tr>
<th>weinig + N-loos</th>
<th>weinig + N-rijk</th>
</tr>
</thead>
<tbody>
<tr>
<td>waardevol (6)</td>
<td>‘valuable’</td>
</tr>
<tr>
<td>ademloos (0)</td>
<td>‘breathless’</td>
</tr>
<tr>
<td>begripvol (5)</td>
<td>‘understanding’</td>
</tr>
<tr>
<td>zinloos (0)</td>
<td>‘useless’</td>
</tr>
<tr>
<td>hoopvol (70)</td>
<td>‘hopeful’</td>
</tr>
<tr>
<td>genadeloos (0)</td>
<td>‘merciless’</td>
</tr>
<tr>
<td>succesvol (127)</td>
<td>‘successful’</td>
</tr>
<tr>
<td>nuttelooos (0)</td>
<td>‘useless’</td>
</tr>
<tr>
<td>sfeervol (2)</td>
<td>‘cosy’</td>
</tr>
<tr>
<td>sfeerloos (0)</td>
<td>‘cheerless’</td>
</tr>
<tr>
<td>belangrijk (11)</td>
<td>‘important’</td>
</tr>
<tr>
<td>belangeloos (0)</td>
<td>‘disinterested’</td>
</tr>
</tbody>
</table>

weinig displays the same restriction as the negative prefix un in not being able to combine with negative adjectives, whether derived or underived.

the same restriction can be shown to hold for its French counterpart peu ‘little’.

these facts provide direct evidence against the Z/H-generalisation, which is explicitly formulated as a restriction on morphological negation.

the restriction observed here (along with the ones observed earlier) can be explained in terms of (7).

assume that weinig spells out the features Neg and Q:

\[
< \text{weinig} /, [\text{Neg}\ \text{Neg}\ [\text{QP}\ Q]] >
\]

combining weinig with a positive adjective is unproblematic (26), but with a negative adjective a violation of (7) will ensue, as shown in (27):
the fact that the negative adjective modifier weinig ‘little’ shows the same polarity restriction as the un-prefix is accounted for by the constraint formulated in (7), assuming that:

- negative adjectives contain a Neg-feature
- weinig ‘little’ contains a Neg-feature

the same violation of (7) will occur with derived negative adjectives:

- *weinig + on + A (e.g. *weinig onaangenaam ‘little unpleasant’)
- *weinig + A + loos (e.g. *weinig zinloos ‘little useless’)

Diagram:

```
NegP
  weinig ← NegP
    Neg  QP  Neg  QP ⇒ actief
    Neg  Q  aP

(26)

NegP
  weinig ← NegP
    Neg  QP  Neg  NegP ⇒ passief
    Neg  Q  aP

(27)
```
4.2 Structural nonadjacency

The examples below at first sight appear to be counterexamples to the general pattern preventing the stacking of multiple negative morphemes:

\[(30)\] a. undisheartened  
b. undisputed  
c. undiscoverable  
d. undisputed

\[(31)\] unharmed (harm)  
unscathed (scathe)  
undefeated (defeat)  
unblamable (blame)  
unobjectionable (object)
(32) ongecompliceerd ‘uncomplicated’ (compliceren ‘complicate’)
onschadelijk ‘harmless’ (schade ‘harm’)
onschuldig ‘innocent’ (schuld ‘guilt’)
ondogmatisch ‘undogmatic’ (dogma ‘dogma’)

▷ these adjectives are all derived from (negative) verbs or nouns
▷ if there is a Neg head, it attaches to the noun or verb
▷ this does not conflict with the higher negative head spelled out by un-/on-

5 Conclusion

▷ we showed how a commonly presupposed restriction on admissible fseqs (\(<X, X>\)) allows a principled explanation for a long-standing and unexplained set of data in the domain of morphological negation.
▷ we showed that the pattern extends to negative morphemes in general, including syntactic modifiers like weinig ‘little’.
▷ the account relies on the presence of a Neg-feature in negative adjectives, negative affixes, and negative modifiers like weinig ‘little’.
References