

# 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 1: *un-* (BNC/ COCA)

	<b>PosA</b>	<b>NegA</b>	<b>un-PosA</b>	<b>un-NegA</b>
wise-foolish	wise 2,118/10,018	foolish 1,088/4,406	unwise 399/792	unfoolish <b>0/0</b>
happy-sad	happy 11,166/55,400	sad 3,241/17,549	unhappy 1,822/5,763	unsad <b>1/0</b>
kind-rude	kind 23,349/1,855,404	rude 942/3,386	unkind 257/512	unrude <b>0/0</b>
true-false	true 17,577/90,165	false 3,529/14,944	untrue 277/1,195	unfalse <b>0/0</b>
easy-difficult	easy 14,143/65,942	difficult 21,433/72,543	uneasy 915/3,386	undifficult <b>0/1</b>

- ▷ 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	*unuseless	not useless
	merciless	*unmerciless	not merciless
	cheerless	*uncheerless	not cheerless

- ▷ these cases contrast minimally with positive noun-derived adjectives ending in *-ful*:

- (3)    successful    unsuccessful    not successful  
       lawful        unlawful        not lawful  
       eventful     uneventful     not eventful  
       helpful      unhelpful      not helpful  
       faithful     unfaithful     not faithful
- (4)    \*undishonest        not dishonest  
       \*undiscourteous    not discourteous  
       \*undisloyal        not disloyal  
       \*undiscomfortable    not uncomfortable
- (5)    \*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) \* $\langle X, X \rangle$

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

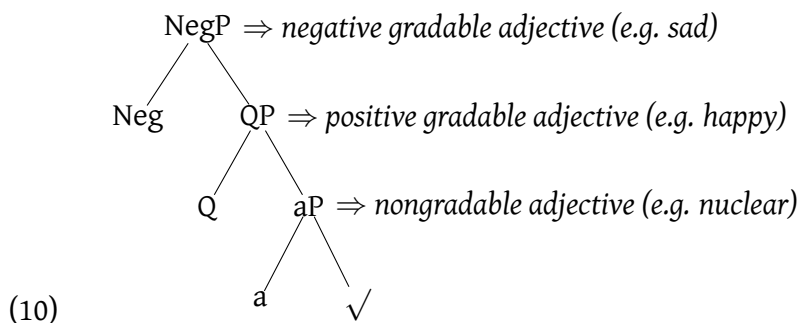
### 2.1 General background assumptions

- ▷ 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:  $\langle \text{Neg}, \text{Q}, \text{a}, \checkmark \rangle$ 
  - $\checkmark$ : a root feature (a dimension)
  - $\text{a}$ : a categorial head feature
  - $\text{Q}$ : contributes gradability (an ordering  $<$  on a scale)
  - $\text{Neg}$ : a negation feature (scale reverser: reverses the ordering of the scale of the adjective)



- ▷ 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)  $\langle / \Delta n /, [_{\text{NegP}} \text{Neg} [_{\text{QP}} \text{Q}]] \rangle$

▷ 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'

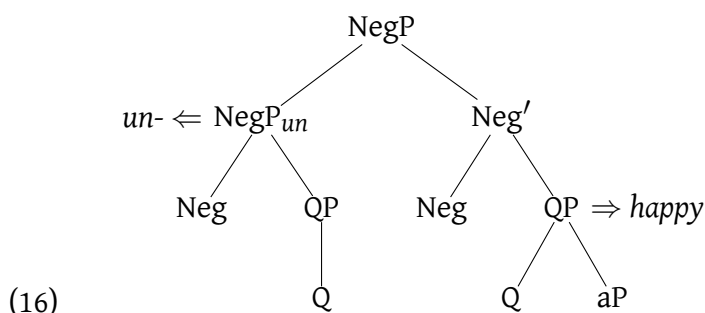
(13)

A	non-A	un-A
American	non-American	unamerican
grammatical	nongrammatical	ungrammatical
Cartesian	non-Cartesian	un-Cartesian
maternal	nonmaternal	unmaternal
motherly	??nonmotherly	unmotherly

(14) a. The blood found in 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



▷ derivation:

- *happy* spells out QP in the usual way.
- in a parallel derivation, a complex specifier ( $\text{NegP}_{un}$ ) is created, which spells out as *un*-.
- this  $\text{NegP}_{un}$  is merged in the Spec of a Neg-head dominating the QP of

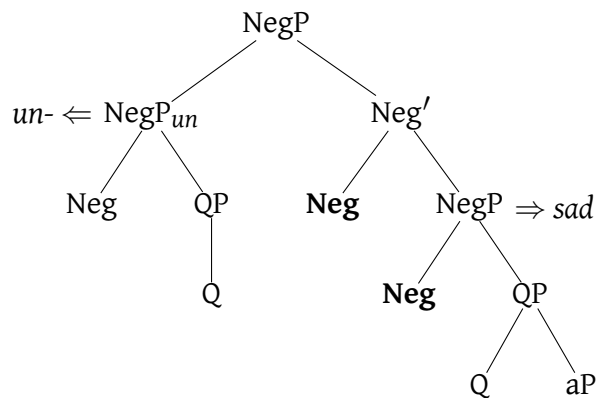
*happy*, creating the structure in (16).

### 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:



(17)

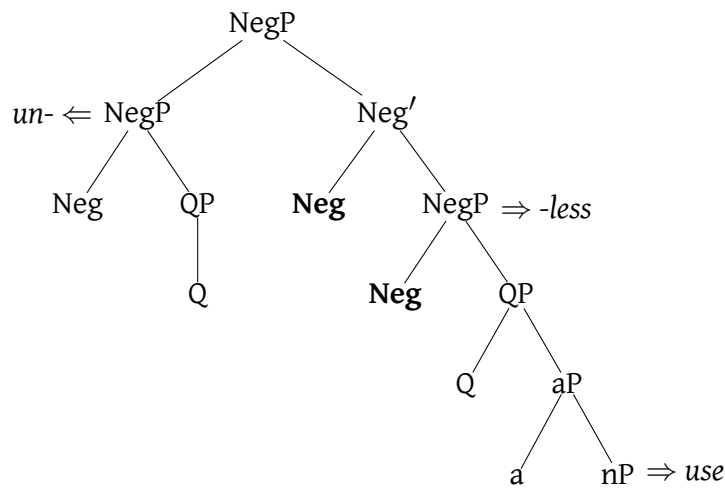
- ▷ derivation:
- *sad* spells out NegP in the usual way.
  - in a parallel derivation, a complex specifier ( $NegP_{un}$ ) is created, which spells out as *un-*.
  - merging this  $NegP_{un}$  as a specifier requires the introduction of another Neg-head.
- ▷ the tree in (17) violates the restriction in (7), since we now have a sequence  $\langle \text{Neg}, \text{Neg}, \text{Q} \rangle$ .

#### 3.2 *Un*-prefixed derived negative gradable adjectives

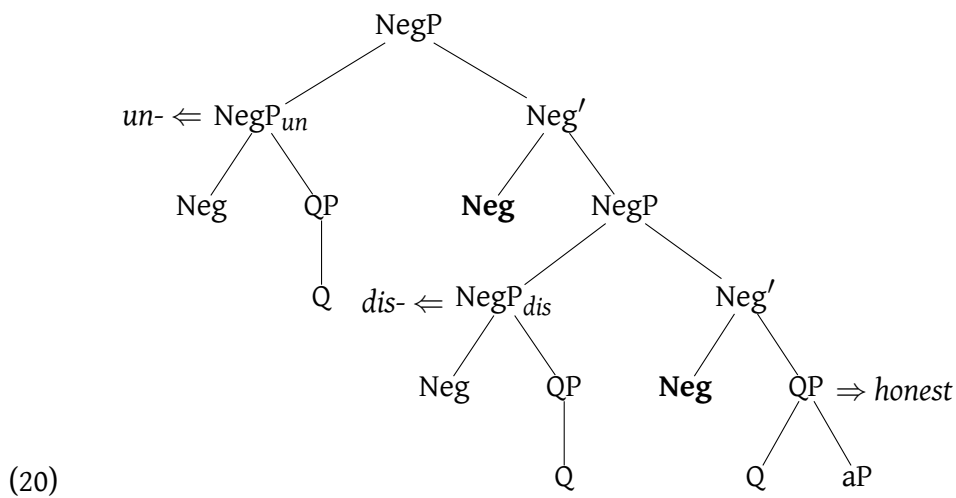
▷ the feature set of *-less* reflects the fact that *-less* derives negative gradable adjectives (i.e. Neg, Q, and a, respectively).

(18)  $\langle /l_{\partial S}/, [_{NegP} \text{Neg} [_{QP} \text{Q} [_{aP} \text{a} ]]] \rangle$

▷ the tree of \*unuseless:



- ▷ 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*:



▷ 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 adjectival 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. <i>weinig</i> berouwvol<br>little remorseful    | (24) | a. * <i>weinig</i> ademloos<br>little breathless       |
|      | b. <i>weinig</i> begripvol<br>little understanding |      | b. * <i>weinig</i> zinloos<br>little senseless         |
|      | c. <i>weinig</i> hoopvol<br>little hopeful         |      | c. * <i>weinig</i> genadeloos<br>little merciless      |
|      | d. <i>weinig</i> succesvol<br>little successful    |      | d. * <i>weinig</i> nutteloos<br>little useless         |
|      | e. <i>weinig</i> belangrijk<br>little important    |      | e. * <i>weinig</i> belangeloos<br>little disinterested |

Table 2: *weinig* + adjective (CHN)

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

Table 3: *weinig* + N-loos/-vol/-rijk (CHN)

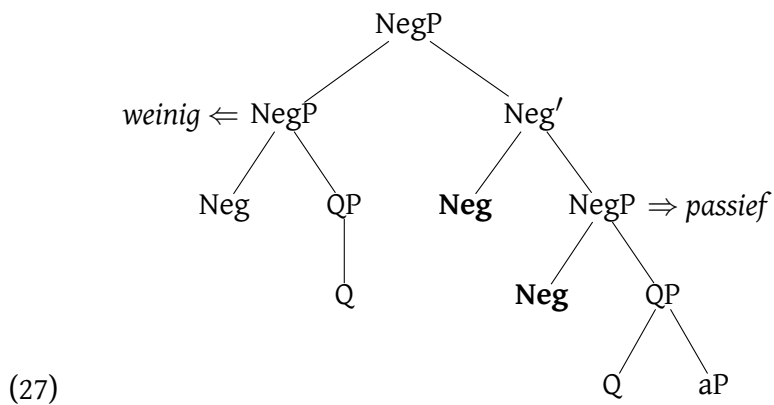
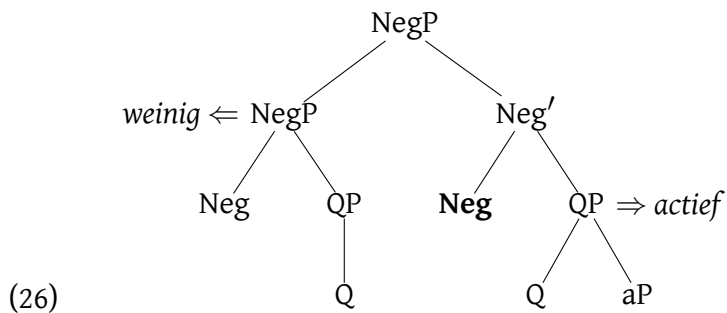
<b>weinig + N-vol/-rijk</b>	<b>weinig + N-loos</b>
waardevol (6) 'valuable'	ademloos (0) 'breathless'
begripvol (5) 'understanding'	zinloos (0) 'useless'
hoopvol (70) 'hopeful'	genadeloos (0) 'merciless'
succesvol (127) 'successful'	nutteloos (0) 'useless'
sfeervol (2) 'cosy'	sfeerloos (0) 'cheerless'
belangrijk (11) 'important'	belangeloos (0) 'disinterested'

- ▷ *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:

(25) < /wɛinəʏ/, [<sub>NegP</sub> Neg [<sub>QP</sub> 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):

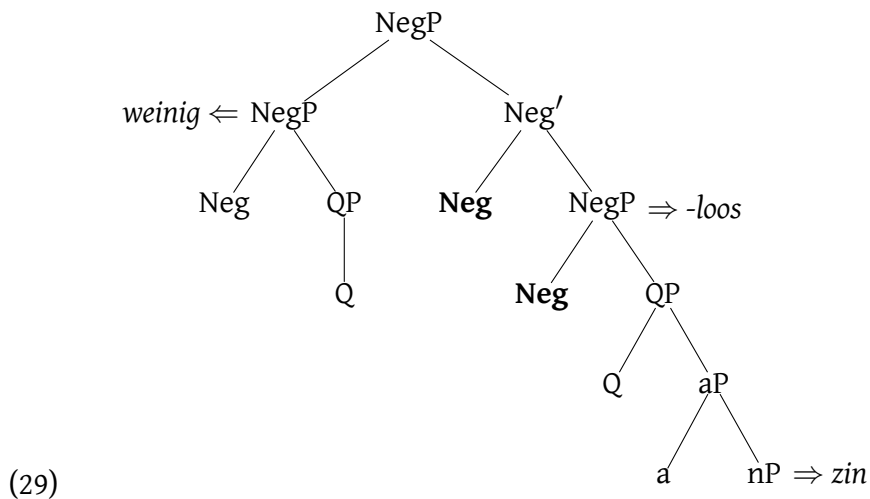
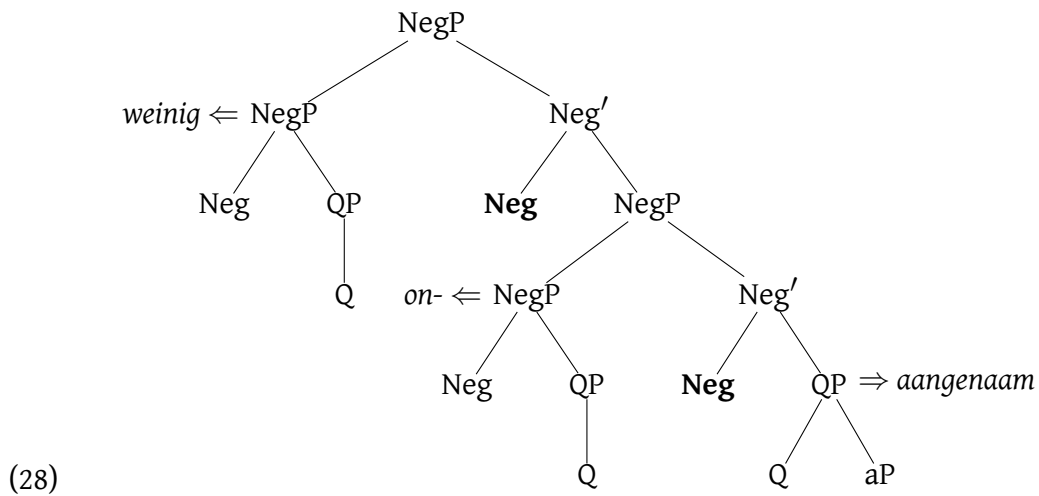


▷ the fact that the negative adjective modifier *weinig* 'little' shows the same polarity restriction as the *un*-prefix is accounted for by the constraint formulated in (7), assuming that:

- 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')



## 4.2 Structural nonadjacency

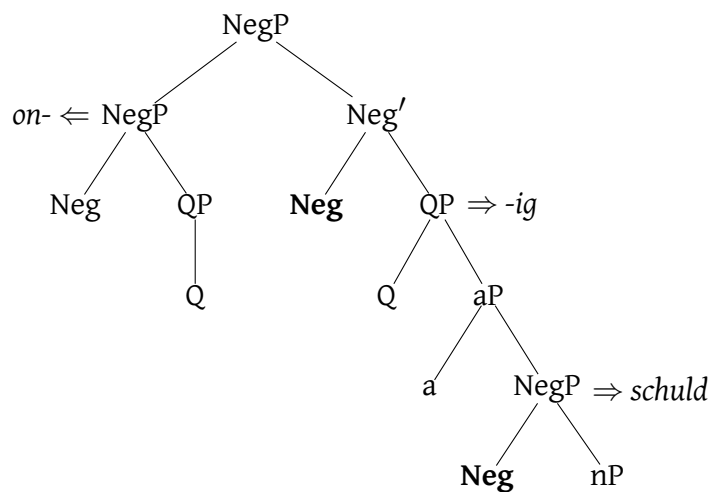
▷ the examples below at first sight appear to be counterexamples to the general pattern preventing the stacking of multiple negative morphemes:

- (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-*



(33)

- ▷ the two Neg heads are separated by other heads in the fseq.
- ▷ the tree does not violate (7).

## 5 Conclusion

- ▷ we showed how a commonly presupposed restriction on admissible  $f_{seqs}$  ( $*\langle X, X \rangle$ ) 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'.

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