

# (Dis)obeying the Head-Final-Filter

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Linearising Constituents Across Domains 2020  
October 15-16, 2020

## 1 Background

### 1.1 Greenberg’s (1963) Universal 21

“If some or all adverbs follow the adjective they modify, then the language is one in which the qualifying adjective follows the noun and the verb precedes the object as its dominant order.”

[N [Adv Adj]]	5
[N [Adj Adv]]	8
[[Adv Adj] N]	11
[[Adj Adv] N]	0

- (1) a. a [smoothly running] meeting  
b. \*a [running smoothly] meeting (Sadler & Arnold 1994)

### 1.2 Williams’ (1982) Head Final Filter

Universal 21 gets later extended as Williams’ (1982) Head Final Filter (HFF).

“English (and German) have a constraint barring post-head material in prenominal modifiers, which bans post-adjectival **modifiers** as well as **complements**.”

- (2) a. the [proud] man  
b. \*the [proud of his son] man  
c. \*the man [proud]  
d. the man [proud of his son] (Abney 1987)

### 1.3 Domain of the HFF

Not only **AP**, but also **PP** and **CP** modifiers/complements:

- (3) \*the [PP on the table] pen  
(4) \*a [CP which I published in 1991] book (Escribano 2004)

And arguably **degree constructions** as well:

- (5) \*John is [more than Bill (is)] tall.  
(6) \*John is [too to be honest] kind. (Grosu and Horvath 2006)

## 1.4 Exceptions to the HFF

Lexical formations:

- (7) a. a three-place predicate  
b. a higher-than-average salary  
c. an up-to-date bibliography (Escribano 2004)

*Tough*-adjectives:

- (8) a. an easy-to-understand book  
b. a hard to refute argument (Sheehan 2017)

*Enough*-constructions:

- (9) John is a smart enough person to find a job.

## 1.5 HFF cross-linguistically

Other HFF-obeying languages (cf. Sheehan 2017):

- Dutch, English, German, Swedish
- French, Italian, Portuguese, Romanian, Spanish
- Czech, Serbo-Croatian, Slovak, Slovene, Sorbian
- Finnish, Hungarian

Alternative word orders used instead of A–PP–N:

- PP–A–N (Dutch, Hungarian, Serbo-Croatian)
- N–A–PP (English, Polish, Romance)
- A–N–PP (Serbo-Croatian, English for some adjectives)

- (10) de op zijn vrouw trotse man  
the of his wife proud man  
‘the man proud of his wife’

- (11) a father proud of his son

- (12) a different view from yours (Escribano 2005)

## 2 Two issues

What underlies all these facts cannot be a matter of **head-finality** for two different reasons:

1. There are various languages that allow the A–PP–N order, thus violating the HFF.
2. There are languages with head-final post-nominal APs, to which the HFF is not defined to apply, but PPs still cannot intervene between A and N in them.

## 2.1 HFF-violating languages

### (13) Modern Greek

o perifanos gia to gio tou pateras  
 the proud of the son his father  
 ‘the father proud of his son’

### (14) Polish

dumny ze swojego syna ojciec  
 proud of his son father  
 ‘a father proud of his son’

Similar HFF-violating patterns are also attested in Bulgarian, Russian, Ukrainian, Latin, and Old Romanian.

## 2.2 Mirrored languages

Basque APs are post-nominal and strictly head-final. Still, the N-PP-A order is systematically ruled out.

### (15) Basque

(Urtzi Etxeberria, p.c.)

a. Jon bere gurasoetaz burujabe-a da.  
 Jon his parents.INSTR independent-ART is

‘John is independent of his parents.’

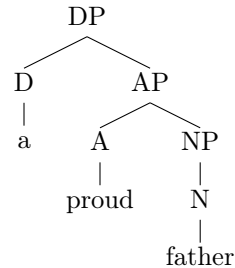
b. \*Jon ume bere gurasoetaz burujabe bat da.  
 Jon child his parents.INSTR independent a is

Intended: ‘John is a child who is independent of his parents.’

## 3 Some existing analyses

- Abney (1987): adjectives as heads in the extended NP (xNP)
- Escribano (2004): LCA + labeling
- Sheehan (2017): LCA + head parameter

### 3.1 Abney (1987)



- adjectives as heads in the xNP
- single complement hypothesis
- N-A-PP: predicative structure in reduced relative clauses (RCs)

#### Problems/challenges:

- DP-internal APs don't have the distribution of APs:

(16) \*John is [<sub>AP</sub> proud father].

- Cross-linguistic situation (1): the HFF-violating languages cannot be accounted for.
- Cross-linguistic situation (2): only the N-A-PP order can be derived, PP-A-N and A-N-PP cannot.

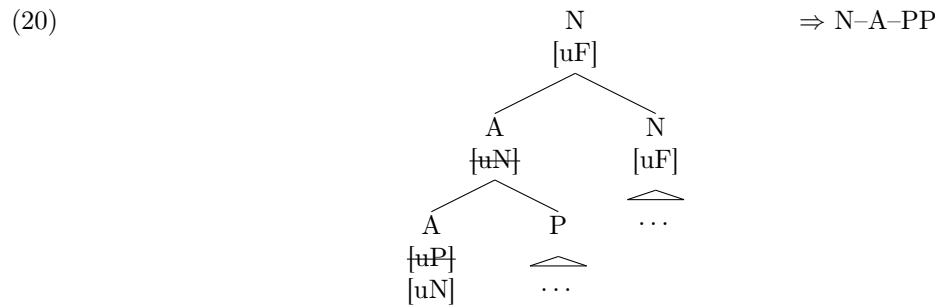
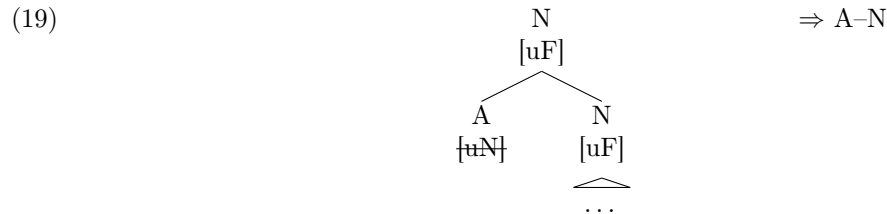
- In order to account for the ban on prenominal PP/CP modifiers, it must be assumed that P and C are also part of xNP:

(17) \*the [PP on the table] pen

(18) \*a [CP which I published in 1991] book

### 3.2 Escribano (2004)

- **Labeling:** A takes N as its complement, even though it doesn't project: what projects are heads with features that remain "unsatisfied".
- **Linearization:** Assuming that the selecting head asymmetrically c-commands its first complement and is asymmetrically c-commanded by its second complement, the LCA yields the order C2-H-C1.



#### Problems/challenges:

- N-A-PP is the only derivable order cross-linguistically. This means that neither the existence of HFF-violating languages, nor PP-A-N and A-N-PP can orders can be explained.
- One has to make very specific assumptions about labeling/linearization.

### 3.3 Sheehan (2017)

- The **head parameter** is specified for head-complement orders, and the **LCA** operates in the rest of the cases as a last resort.
- APs (including their PP complements) are base-generated in postnominal reduced RCs; their prenominal position is derived by movement, hence they asymmetrically c-command the nouns they modify.
- When the instructions for linearization contain missing information, a repair strategy can delete (parts of) higher copies of moved elements.

- (21) PP-A by head parameter  
 A-N by LCA: AP is in a derived position  
 N←-?→PP not specified
- 
- PP-A-N by transitivity
- (22) A-PP by head parameter  
 A-N by LCA: AP is in a derived position  
 N←-?→PP not specified
- 
- A-PP-N-PP through repair: deletion of the higher PP-copy
- (23) PP-A by head parameter  
 N-A by LCA: AP is inside a reduced RC  
 N-PP by LCA: PP is part of AP
- 
- N-PP-A by transitivity
- (24) A-PP by head parameter  
 N-A by LCA: AP is inside a reduced RC  
 N-PP by LCA: PP is part of AP
- 
- N-A-PP by transitivity

**Derived word orders:**

- PP-A-N
- A-N-PP
- N-A-PP
- N-PP-A

**Problems/challenges:**

- The account relies on a stipulated and very specific linearization mechanism.
- The order A-PP-N is predicted to be systematically ruled out.
- The order N-PP-A is predicted to be available.
- The HFF cannot be violable, contrary to fact.

## 4 The “HFF” generalization

On the basis of the following set of languages

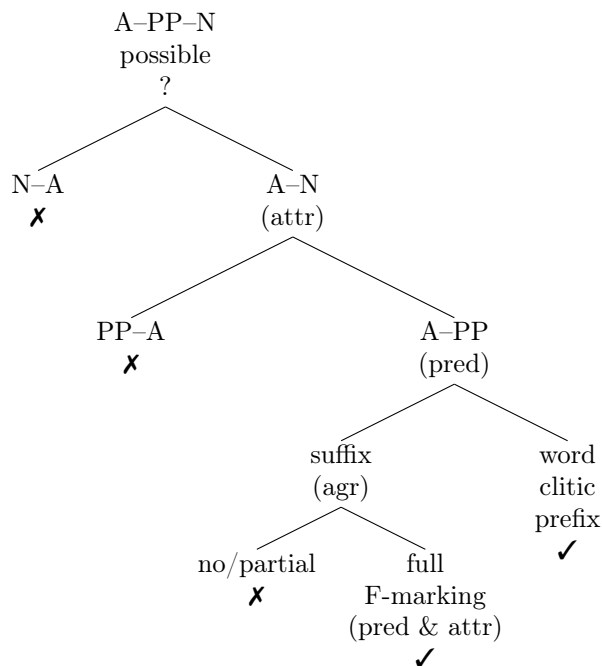
- HFF-obeying languages:
  - Basque
  - Czech, Serbo-Croatian
  - Dutch, English, German
  - French, Italian, Portuguese, Spanish
  - Hungarian
- HFF-violating languages:
  - Atong, Mandarin
  - Latin, Old Romanian
  - Modern Greek
  - Polish, Russian

we can formulate the “HFF” generalization in the following way:

The linear order A-PP-N (or N-PP-A) is possible inside a DP iff:

- (i) the linear order A-PP (or PP-A) is available in the predicative position, and
- (ii) case and all  $\varphi$ -features available in the DP are overtly marked on both attributive and predicative adjectives, unless the attributive marker is not a suffix (or prefix), but a clitic or a free word form.

(25) Example of the decision tree:



#### 4.1 Illustration: full/partial feature marking

Unlike modern Romance languages (HFF-obeying), Latin (HFF-violating) marks not only  $\varphi$ , but also case on adjectives (and nouns).

(26) **Latin** (Cic. Fam. 1.9; from Chiara Gianollo, p.c.)

in [praestantibus in re publica gubernanda] viris  
 in excellent.ABL.M.PL in thing.ABL.F.SG public.ABL.F.SG to-be-governed.ABL.F.SG men.ABL.M.PL  
 ‘in men who excel in the government of the republic’

(27) **Italian**

negli uomini [eccellenti nel governo della repubblica]  
 in.the.M.PL man.M.PL excellent.M.PL in.the.M.SG government.M.SG of.the.F.SG republic.F.SG  
 ‘in the men (who are) excellent in the government of the republic’

#### 4.2 Illustration: (a)symmetric feature marking

Unlike such HFF-violating languages as Greek, Latin, and Polish, HFF-obeying languages like Dutch, German, and Hungarian exhibit an asymmetry in feature marking on attributive and predicative adjectives.

(28) **Greek**

- |  |   |
|--|---|
| a. (Aftos) einai perifan*(-os).<br>he is proud-M.SG.NOM          | b. (Aftoi) einai perifan*(-oi).<br>they are proud-M.PL.NOM        |
| c. o perifan*(-os) pateras<br>the.M.SG.NOM proud-M.SG.NOM father | d. oi perifan*(-oi) goneis<br>the.M.PL.NOM proud-M.PL.NOM parents |

(29) **German**

- |  |   |
|--|---|
| a. Er ist stolz(*-er).<br>he is proud-MASC.SG.STRONG.NOM | b. Sie sind stolz(*-e).<br>they are proud-PL.STRONG.NOM |
| c. stolz*(-er) Vater<br>proud-MASC.SG.STRONG.NOM father  | d. stolz*(-e) Eltern<br>proud-PL.STRONG.NOM parents     |

(30) **Hungarian**

- |                                       |   |
|---------------------------------------|---|
| a. (Ő) büszke volt.<br>s/he proud was | b. (Ők) büszké*(-k) voltak.<br>they proud-PL were |
| c. egy büszke apa<br>a proud father   | d. a büszké(*-k) szülők<br>the proud-PL parents   |

For a discussion of potential counter-evidence from Russian long-/short-form adjectives, see Appendix A.

### 4.3 Illustration: (non-)affixal feature marking

If a language has asymmetric feature marking on attributive/predicative adjectives, it can still be HFF-violating if its attributive markers on adjectives are free word forms or clitics, but not affixes.

(31) **Mandarin Chinese**

A-PP-de-N

yi-ge duli yu fumu de qingshaonian  
one-CL independent from parents DE teenager

‘a teenager who is independent of his parents’

(32) **Atong** (Tibeto-Burman; van Breugel 2010)

N-DP-A-attr

[naŋʔ=məŋ gore [jal=na rak-khal] =gaba] =aw  
2S=GEN horse run=DAT strong-SUP =ATTR =REF

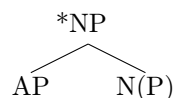
‘your fastest running horse (strongest in running)’

## 5 Assumptions

The facts follow if it is assumed that:

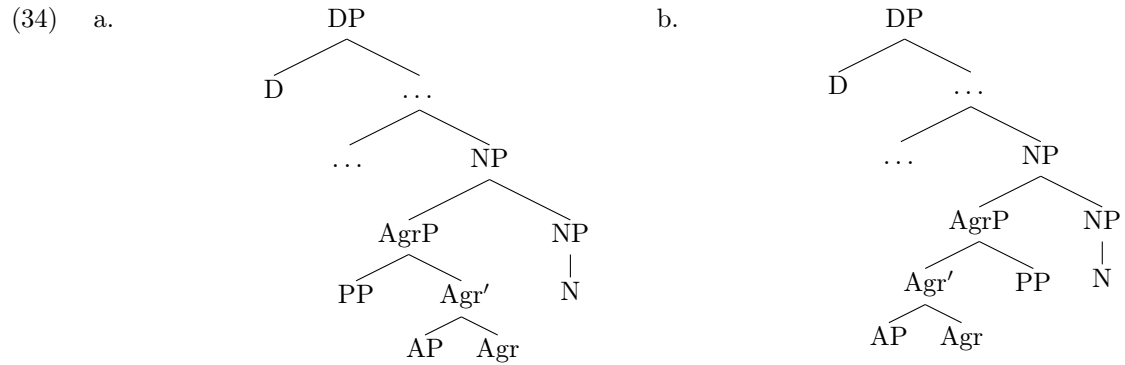
- Direct modification of N by A is not possible; an attributively used adjective always requires an additional, potentially covert, inflectional marker containing all case features and  $\varphi$ -features that are active in the DP.

(33)



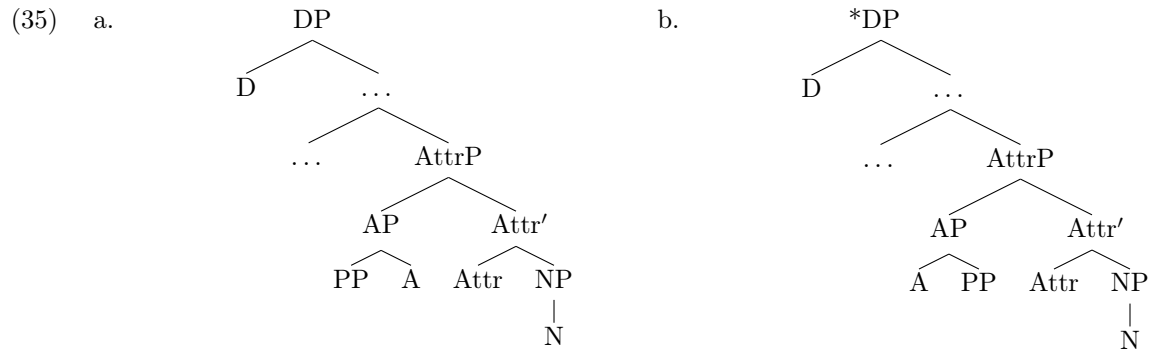
- Either such features are available already in the xAP — in this case, they are already available in predicatively used adjectives — or otherwise they can be added in the course of constructing the xNP.
- HFF-violating languages either have an affixal agreement morpheme in the xAP, or have a morpho-phonologically independent agreement marker in the xNP.
- HFF-obeying languages have an affixal agreement morpheme in the xNP.

### 5.1 Basic structures for languages with adjectival inflection in the xAP



- In such languages, Agr must first attach to AP, and then may further combine with a PP.
- Analogous structures for languages with postnominal APs and languages with prefixal Agr.

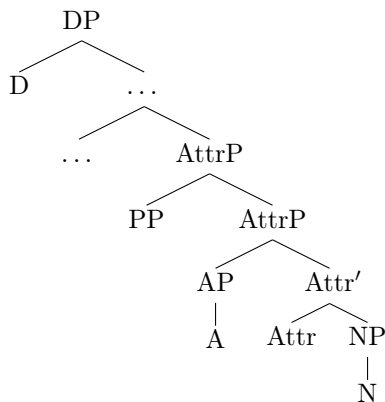
### 5.2 Basic structures for languages with adjectival inflection in the xNP



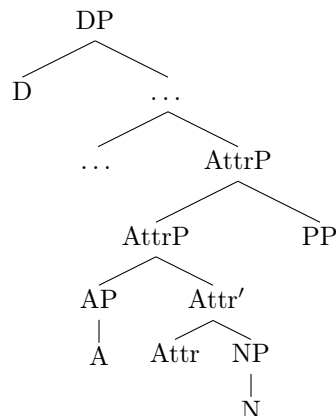
- If Attr is a suffix and thus must right-attach to the AP, A can only select a PP to its left, not to its right. Only in languages where adjectives can have leftward complements/modifiers is this possible.
- If Attr is morpho-phonologically independent, PPs can still either left-attach or right-attach to AttrP.



(36) a.



b.



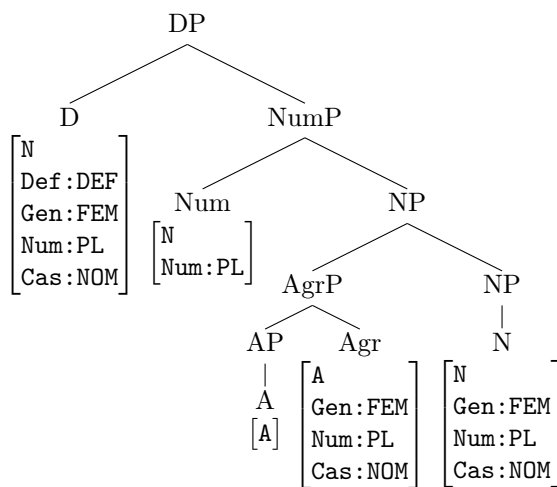
- Note that nothing prohibits A's complements/modifiers to attach to AttrP as well.
- If they left-attach to it, this yields the PP–A–N order, which is string-identical to the one in (35a). By contrast, if they right-attach to it, this yields the discontinuous A–N–PP order.

## 6 Language-specific analyses

	HHF status	predicative marking	attributive marking	attributive marker
1 <b>Greek</b>	violating	full	full	suffix
2 <b>German</b>	obeying	none	full	suffix
3 <b>Dutch</b>	obeying	none	partial	suffix
4 <b>English</b>	obeying	none	none	–
5 <b>Italian</b>	obeying	partial	partial	suffix
6 <b>Basque</b>	obeying		none	–
7 <b>Mandarin</b>	violating			word

### 6.1 Greek

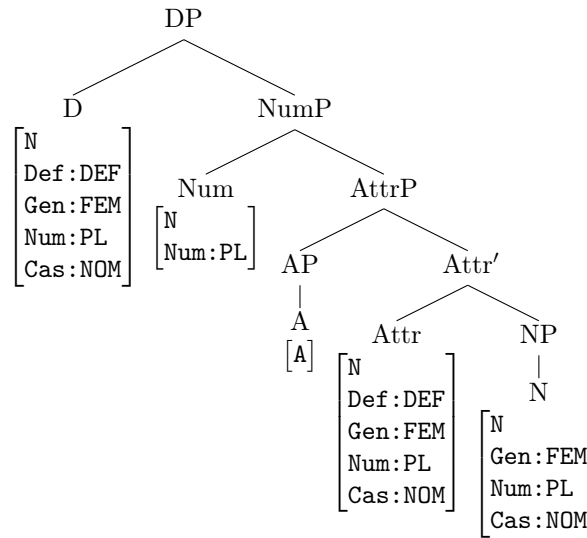
(37)



Since in Greek (and also in Latin, Polish, Russian) the xAP itself already contains an agreement affix that has all relevant case and  $\varphi$ -features, the xAP (i.e. AgrP) can adjoin to NP directly. As AgrP can take either a leftward or a rightward XP complement/modifier, the HHF can be violated.

## 6.2 German

(38)



In German, adjectives in their predicative form are bare and don't have any overt case/ $\varphi$  morphology. PPs can either left- or right-attach to them.

- (39) a. Marie ist [stolz auf ihre Tochter].  
 Marie is proud of her daughter
- b. Marie ist [auf ihre Tochter stolz].  
 Marie is of her daughter proud

By contrast, attributive adjectives carry obligatory agreement marking; bare forms/zero markings are not possible for any gender-number-case combination, in any declension paradigm:

	strong				weak			
	M	F	N	PL	M	F	N	PL
NOM	-er	-e	-es	-e	-e	-e	-e	-en
ACC	-en	-e	-es	-e	-en	-e	-e	-en
DAT	-em	-er	-em	-en	-en	-en	-en	-en
GEN	-en	-er	-en	-er	-en	-en	-en	-en

This means that for attributively used adjectives, case and all  $\varphi$ -features must be introduced in the xNP (i.e. by Attr). This gives rise to the HFF: while leftward complements/modifiers are possible, APs cannot select or be modified by any rightward PPs/XPs. The reason for this is a constraint on the attachment of inflectional morphology along the lines of Ackema & Neeleman's (2000) Input Correspondence.

(40) **Input Correspondence**

(Ackema & Neeleman 2000)

If an AFFIX takes a head Y or a projection of Y as its input,  
 the AFFIX is phonologically realized as /affix/, and  
 Y is phonologically realized as /y/,  
 then /affix/ takes /y/ as its input.

Consequently, an (overt) Attr-morpheme can only attach to head-final APs, as it must attach to the head of the AP that it syntactically selects and it's a suffix, i.e. it must right-attach.

- (41) a. \*die [stolz auf ihre Tochter]-e Mutter  
the proud of her daughter-ATTR mother  
b. die [auf ihre Tochter stolz]-e Mutter  
the of her daughter proud-ATTR mother

Note that Attr cannot also select a PP/XP, as it already selects an NP. Thus, PP/XP-adjunction would only be possible at the AttrP level.

- (42) \*die [stolz]-e auf ihre Tochter Mutter  
the proud-ATTR of her daughter mother

### 6.3 Dutch

Dutch is similar to German in that predicatively used adjectives are always bare forms.

- (43) a. De man is lang.  
the.COM man is tall  
b. Het kind is lang.  
the.NEUT child is tall  
c. De mannen zijn lang.  
the.PL men are tall  
d. De kinderen zijn lang.  
the.PL children are tall

Dutch differs from German, however, in that nouns do not always trigger overt morphology on attributive adjectives: attributives take a schwa-ending, except when they modify an indefinite neuter singular noun:

	COM	NEUT	PL
DEF	-e	-e	-e
INDEF	-e	-∅	-e

- (44) a. de jong-e vrouw  
the.COM young-ATTR woman.COM  
b. het jong-e kind  
the.NEUT young-ATTR child.NEUT  
c. een jong-e vrouw  
a young-ATTR woman.COM  
d. een jong-∅ kind  
a young-ATTR child.NEUT

With **overt** agreement morphology (i.e. schwa), things work here in the same way as in German: the schwa morpheme must right-attach to the adjective that heads the AP it selects.

- (45) a. een [op haar vader trots<sub>A</sub>]-e vrouw  
a of her father proud-ATTR woman  
b. \*een [trots op haar vader<sub>N</sub>]-e vrouw  
a proud of her father-ATTR woman  
c. \*een [trots-e op haar vader<sub>N}] vrouw  
a proud-ATTR of her father woman</sub>

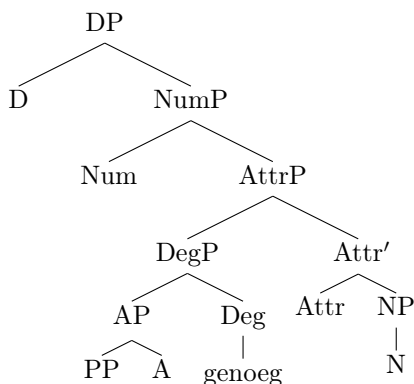
With **covert** inflectional morphology, things work differently. To see this, let us first consider the following data based on Van Riemsdijk (1998).

- (46) a. een [groot genoeg<sub>Deg</sub>]-∅ kind  
 a big enough-ATTR child
- b. \*een [groot genoeg<sub>Deg</sub>]-e vrouw  
 a big enough-ATTR woman
- c. \*een [groot-e genoeg<sub>Deg</sub>] vrouw  
 a big-ATTR enough woman
- d. \*een [groot genoeg<sub>Deg</sub>] vrouw  
 a big enough woman
- e. ?een [trots op haar vader genoeg<sub>Deg</sub>]-∅ kind  
 a proud of her father enough-ATTR child

When the attributive agreement marker is overt (schwa), the post-adjectival degree word *genoeg* ‘enough’ interrupts the adjacency between it and the adjective, which leads to ungrammaticality, as before. This is not the case when the agreement marker is null, however, as (46a) demonstrates. This means that zero morphology does impose an adjacency requirement with respect to its “host”, but it is less strict compared to that of overt morphology.

One way of modeling this is to assume that zero morphology follows a lighter version of the Input Correspondence constraint in (40): it must be adjacent to a head with the categorial feature it selects for, i.e. to any head within the relevant extended functional projection and not necessarily to the lexical head in it — even if this head is a free word, rather than an affix. Under the assumption that degree words/morphemes head a dedicated functional projection in xAP (Abney 1987, Grimshaw 1991, Kennedy 1999), this accounts for the data in (45) and (46).

(47)



Another way of modeling these data is to assume that the Input Correspondence constraint applies here in a less strict way in that a zero affix must have a “host” of the same category as the projection that the affix selects syntactically, but its host does not have to be the head of this projection. Under the assumption that *genoeg* is an adjective (which it is etymologically) or a zero-derived deadjectival Deg-element (since it does not inflect, unlike adjectives), the contrasts in (45) and (46) get accounted for.

## 6.4 English

English attributive adjectives lack agreement morphology altogether. This raises the question of whether they are morpho-syntactically identical to their predicative forms, or whether the inflectional morpheme is always null (as we predict must be the case).

Evidence for the latter comes from a comparison with Dutch. Since the distributional pattern of English attributive adjectives is identical to that of Dutch attributive adjectives with covert agreement morphology, the Attr head can be taken to be null in this case as well.

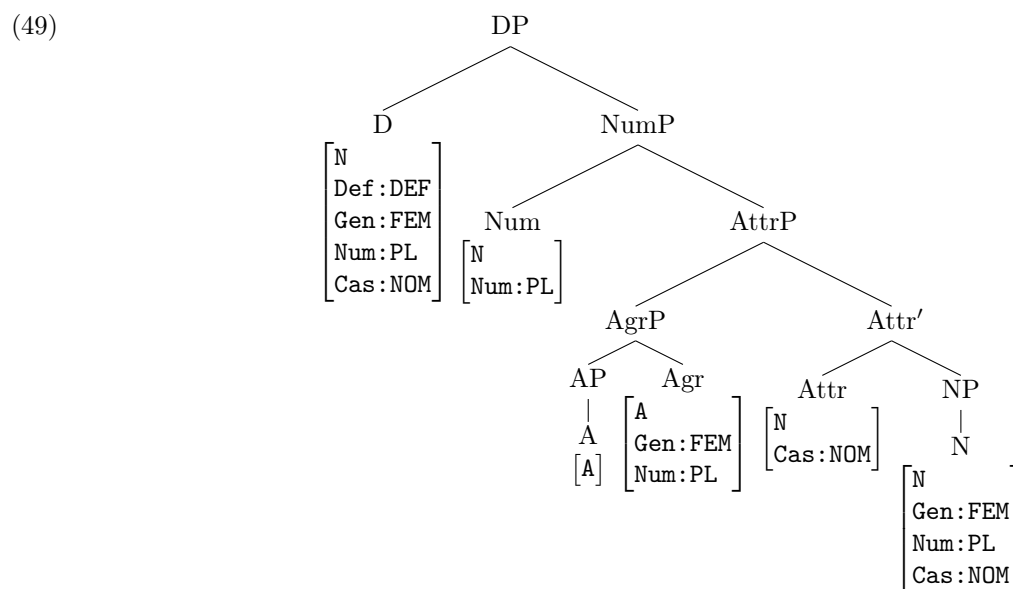
- (48) a. a [proud<sub>A</sub>]-∅ child  
 b. \*a [proud of his mother<sub>N</sub>]-∅ child  
 c. a [proud enough<sub>Def/A</sub>]-∅ child

Thus, we take English attributively used adjectives to contain an Attr-affix as well, despite it being morphologically invisible. This is not surprising as English reflects fewer inflectional distinctions in general.

## 6.5 Italian

Same as English, with the difference that only a subset of features (namely, case) gets introduced by Attr, whereas gender and number are already present in the predicative form.

This means that both Agr and Attr are present in the structure of Italian (prenominal) adjectives, and the adjacency constraints on the unpronounced Attr-head account for the fact that Italian is HFF-obeying.



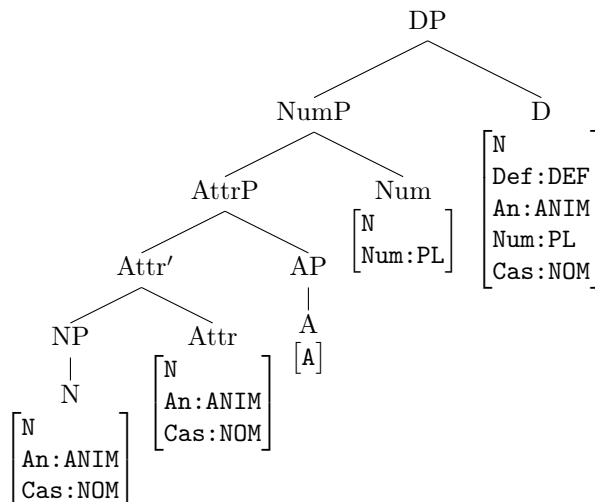
## 6.6 Basque

Basque is a mirror image of English with respect to the structure of AP and NP: APs are strictly head-final predicatively and predominantly postnominal attributively. This means that the N–A–PP order is out for independent reasons, as is the PP–A–N order in English.

The N–PP–A order is out for the same reason as in English as well: the PP interrupts the required adjacency of the (null) Attr-head and the AP (to the extent that Attr can be assumed to be prefixal to begin with).

Note that adnominal PPs and RCs are prenominal and must be introduced by means of a noun-adjacent attributivizer (*-ko*) or complementizer.

(50)



## 6.7 Mandarin

Since the attributive marker *de* is morpho-phonologically independent, the Input Correspondence constraint does not apply and the HFF can be violated. Same holds for (prenominal) PPs and RCs.

(51) **Mandarin Chinese**

A-PP-de-N

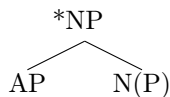
yi-ge duli yu fumu de qingshaonian  
one-CL independent from parents DE teenager

‘a teenager who is independent of his parents’

## 7 Towards an explanation

So far, the HFF-Generalization, as well as a number of related language-specific properties, follow exactly from the assumptions made in section 5. At the same time, the question arises as to why these assumptions should hold, most notably why the tree below (repeated from (33)) is ungrammatical, and why this additional head needs to contain all relevant case and  $\varphi$ -features.

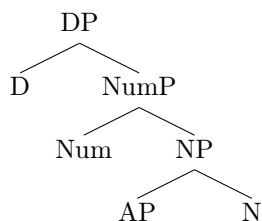
(52)



Naturally one could allude to the idea that lexical categories in general cannot merge with other categories (an assumption that may also underlie abstract case). However, such a step would still be in need of proper explanation, and not explain the requirement that the additional functional head must be case/ $\varphi$ -complete.

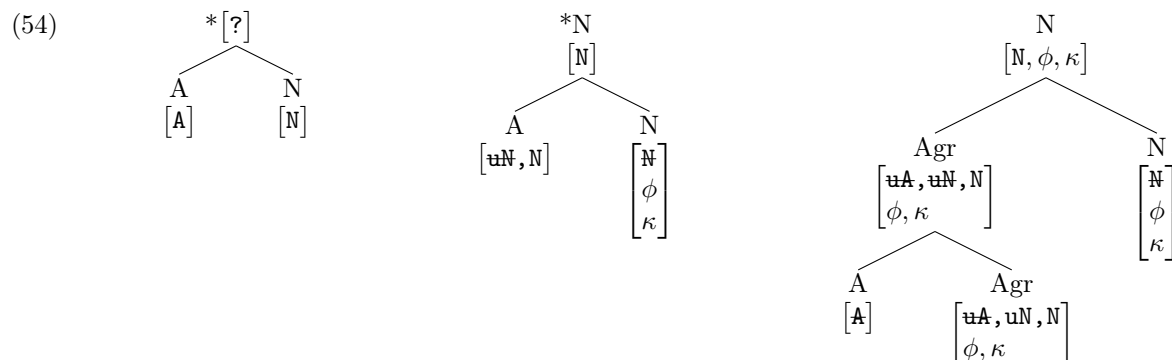
Another step could be that APs intervene in the Agree relation between D, Num, and N (or what exactly the heads are in xNP). APs in specifier/adjunct carry nominal features and unless adjectives are inherently specified for the features present on the noun, these APs could intervene in D-N Agree relations.

(53)



At the same time, it is not readily clear why a specifier/adjunct of some XP should count as an intervener for heads that probe for the features present on NP. Especially adjuncts are known to be syntactically opaque, hence the question arises as to why they can act as interveners in the first place.

On a slightly speculative note, we suggest that the combinatorial principles behind adjectival modification may provide a reason why adjectival specifiers/adjuncts may act as interveners. Much in line with ideas present in categorial grammar and what has been suggested in Escribano (2005) and Zeijlstra (2020), one can think of (attributive) adjectives as elements carrying both a feature [N] and [ $\mathfrak{u}$ N]. This captures both the nominal character of adjectives and the fact that they do need to select/modify some noun (even in predicative usages).



If APs select an NP and return an NP, then the source of the nominal feature on top of the AP-N merger actually comes from the adjective and not from the noun itself. As this is the highest nominal feature of the entire NP, it is this feature that D must target. Without the adjective having inherited the case and phi features of the noun, the entire NP would lack any  $\varphi$  and case values. The way to ensure that these (case/) $\varphi$ -features are present on the adjectival head is by having a functional head Attr first agree with the N, and then value its specifier.

## 8 Conclusions

The HFF is the result of the fact that attributive adjectives, derived from predicative adjectives, must realize all active features in the DP.

If the predicate form of the adjective lacks those features, an attributive head that selects the AP must be inserted, which then contains these features.

The morphological requirements of this attributive head determine whether other phrases can intervene between the adjective and the attributive head.

Languages where the predicative form of the adjective already contains all relevant features are predicted not to be subject to the HFF.

Languages where the attributive head is morphologically independent are predicted not to be subject to the HFF either.

This together derives the HFF-generalization.

## Appendix A: The long-form/short-form distinction in Russian

The fact that Russian, an HFF-violating language, tends to use two morphologically different forms of adjectives in the attributive and predicative position (namely, the so-called long and short forms) seems to

speak against the generalization presented in section 4.2. Note, however, that both forms are equipped with the same number of  $\varphi$ -features: gender and number.

(55) **Russian**

- a. Ona {bol'n-aja / bol'n-a}.  
 she sick-LONG.FEM.SG sick-SHORT.FEM.SG  
 'She is sick.'
- b. {bol'n-aja / \*bol'n-a} d'evočka  
 sick-LONG.FEM.SG sick-SHORT.FEM.SG girl  
 'a/the sick girl'

Yet, there may in principle be also other, less common features involved in Russian, which are not (or are only partially) marked for on adjectives. For instance, Russian distinguishes the grammatical category of *animacy*, which influences the case paradigm. Animacy is only lexically marked on nouns though and does not have its own morphological marking on any category, so is not a counterexample to either of the generalizations stated above.

Relatedly, the long/short distinction in adjectives in Slavic has sometimes been associated with *specificity*, more concretely, the long forms have been argued to signal specific interpretations of the DPs/NPs they are part of (e.g. for Serbo-Croatian, see ). This does not seem to be the case in Russian, however, since, unlike in Serbo-Croatian, attributively used adjectives can only be in their long forms in Russian, and so specificity cannot be a relevant factor for the long/short distinction in this language (note that, if true, the fact that Serbo-Croatian adjectives are marked for specificity may explain why this language is HFF-obeying).

Finally, the generalization discussed in this section may be questioned for Russian in connection to *case*, since the short forms are not marked for it, being only able to occur in nominative environments. Thus, if an environment requires a non-nominative case, such as, e.g., *consider* in the example below, which assigns instrumental to the adjectival or nominal predicate in the small clause, only the long form of the adjective is possible in this environment.

- (56) Džon sčitajet ëë bol'n-oj.  
 John considers she.ACC sick-LONG.FEM.SG.INSTR  
 'John considers her (to be) sick.'

Crucially, however, Russian predicative adjectives *can* be marked for case (namely, in their long forms), so there is no asymmetry between them and attributive adjectives in this respect.

## Appendix B: The *zo A mogelijk* construction in Dutch

Possible counter-evidence against the assumption that attributive morphology obeys the Input Correspondence constraint comes from the following data from Van Riemsdijk (1998), where overt attributive marker seems to be able to attach not to the head of the AP it selects syntactically:

- (57) a. een [zo snel mogelijk<sub>A</sub>]-∅ vliegtuig  
 a so fast possible-ATTR plane
- b. \*een [zo snell-e mogelijk<sub>A</sub>] auto  
 a so fast-ATTR possible car
- c. een [zo snel mogelijk<sub>A</sub>]-e auto  
 a so fast possible-ATTR car
- d. \*een [zo snel mogelijk<sub>A</sub>] auto  
 a so fast possible car



Note, however, that *mogelijk* has possibly undergone reanalysis in this construction, having become its syntactic head (cf. the inflecting *schnellstmöglich* in German). The somewhat archaic variant of it with *als* ‘as’, in which *mogelijk* is more clearly not its head, does not allow *mogelijk* to attract attributive inflection:

- (58) a. een [zo snell-e] auto als mogelijk  
a so fast-ATTR car as possible
- b. \*een [zo snell-e als mogelijk<sub>A</sub>] auto  
a so fast-ATTR as possible car
- c. \*een [zo snel als mogelijk<sub>A</sub>]-e auto  
a so fast as possible-ATTR car
- d. \*een [zo snel als mogelijk<sub>A</sub>] auto  
a so fast as possible car