Basque adjectives and the functional structure of the noun phrase

Xabier Artiagoitia

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Xabier Artiagoitia
University of the Basque Country

xabier.artiagoitia@ehu.es

0. Introductory remarks*

Several linguists, some in the generative tradition (e.g. Dixon 1977, Hetzron 1978, Sih and Sproat 1988, 1991, Cinque 1994, Scott 2002), have proposed that attributive adjectives inside noun phrases follow some sort of universal hierarchy, the structure of which may vary from very simple to rather sophisticated. Here are two examples:

(1) a. quality > size > shape > color > provenance (Sproat & Shih 1991)

b. subjective comment > ?evidential > size > length > height > speed > ?depth > width > weight > temperature > ?wetness > age > shape > color > nationality/origin > material > compound element (Scott 2002)
[where "A > B" indicates "A is further from noun than B"]

Needless to say, almost all authors acknowledge that one hardly finds all types of adjectives in a single noun-phrase and that the order among adjectives is generally fixed for what we might consider the neutral or unmarked order, but not in absolute terms. In other words, the adjective ordering restrictions referred to in (1) are limited to what Sproat and Shih call neutral *direct modification*, so that indirect modification thru coordination, asyndeton or comma intonation, post-DP predication, or contrastively stressed adjectival modification or N-A collocations are excluded.

More recently, Cinque (1994) and Scott (2002)[1] have linked this fixed hierarchy of adjectives with a corresponding hierarchy of functional heads inside the noun phrase; adjectives, they claim, would be projected in the specifier position of these functional projections. Whereas Cinque (1994) leaves these functional projections open or without a name, Scott (2002) makes a preliminary sketch of what the relevant functional heads

* This research is supported by grant UPV05/03 from the University of the Basque Country. I use the following abbreviations throughout the article: art = article; aux = auxiliary; comp = complementizer; erg = ergative; gen = genitive; inst = instrumental.

[1] Longobardi's (2001) overview of the internal structure of noun-phrases also embraces the same view.

may be (cf. 1c above). The existence of adjective ordering restrictions would then be a reflection of the hierarchy of functional heads imposed by Universal Grammar. Moreover, both authors follow Kayne's (1994) antisymmetric approach to phrase structure and, therefore, their implicit claim is that the *adjectives-as-specifiers* approach should be universal, even for superficial head-final languages like Basque. Recent work by Oyharçabal (2006) takes this approach to Basque DP-internal adjetives.

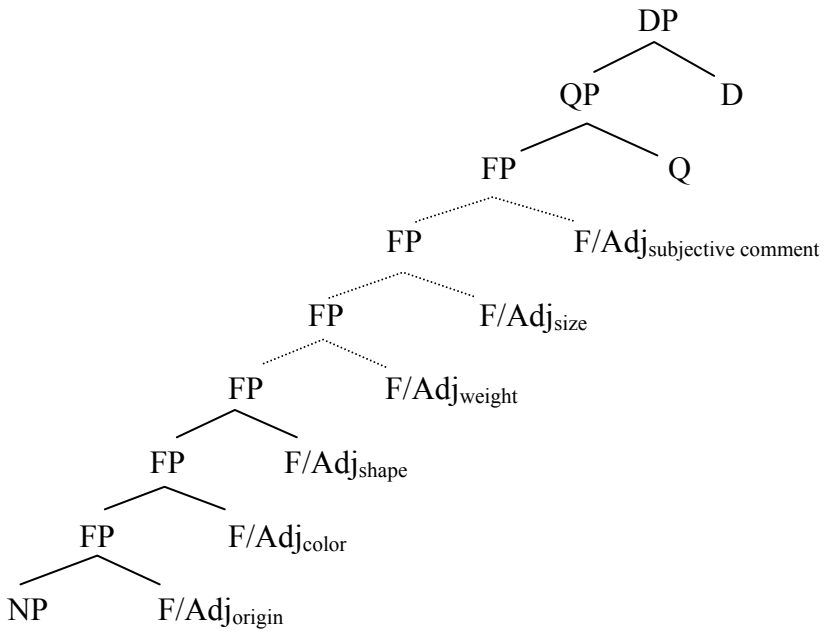
In this article, I would like to suggest an alternative approach, along the following claims:

a. Basque adjectives are indeed merged following a universal hierarchy of functional projections;

b. Basque adjectives are realized in the *head* position, and not in the specifier position;

c. head-positions are to the right of the NP as a result of the head-parameter setting of Basque. Schematically in a tree diagram[2]:

(2)



If right, my suggestion has three clear consequences: the existence of a fixed adjective ordering is independent of the *adjective-as-specifier* analysis; Kayne's antisymmetry hypothesis would not be right, not at least in its original terms; and thirdly, it would confirm that the realization of functional heads/features allows for spec/head variation (the realization of either one is indeed an option in the DP-field).

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[2] Q is equivalent to H/Num of Artiagoitia (2002a). Eguren (2006) adds the functional projection Cl(assifier), just below QP. His proposal is certainly more accurate than mine, but I omit it here to simplify matters. In the tree-diagram I also omit some of Scott's functional heads for ease of exposition.

In a nutshell, I will argue here that Basque adjectives are some sort of functional heads inside a DP structure, a proposal that is in fact not new, as it has been suggested for other languages (e.g. Abney 1987 for English, Androutsoupoulou 1996 for Greek, Berstein 1993 for Romance, Santelmann 1993 for Scandinavian, and so on)[3]. The novelty here, if any at all, is that we propose this for a head-final language and make it an explicit argument for the validity of the head-parameter.

This article is structured as follows: after briefly reviewing previous accounts of adjective ordering in Basque in section 1, I develop the proposal entirely in section 2 providing both empirical and theory-internal arguments. In section 3, I compare my proposal to Oyharçabal's (2006) view; finally, in section 4, I tackle some issues for further research (the place of Basque in a typology of noun-phrases, the existence of phrasal modifiers to the left of the noun, the analysis of DP-internal focalized adjectives).

1. A short overview of adjective ordering in Basque

The Basque linguistic tradition has paid little attention to the issue of adjective ordering, but the prevalent view has been that all orderings are in principle possible. Lafitte (1944) acknowledges that the order depends on the speaker's intention but also on the *harmony* of the words; he adds that the most important is the last one. The Basque Academy Euskaltzaindia (1985, 1993), in line with Sproat and Shih's (1988, 1991) approach, concedes that the most significant or salient adjective category tends to be closer to the noun yet all orders are possible. The examples it gives are the following, with size being closer to the noun than subjective evaluation and color closer than size, width, or subjective evaluation:

(3) a. herri txiki polita (more neutral)
town small beautiful.art
'the/a beautiful small town'

b. herri polit txikia
beautiful small.art
'the/a small beautiful town'

(4) a. kapela urdin zabala
hat blue wide.art
'the/a wide blue hat'

b. kapela gorri handia
hat red big.art
'the/a big red hat'

c. pipa beltz motza
pipe black ugly.art
'the/an ugly black pipe'

[data from Euskaltzaindia 1985: 248]

[3] The suggestion is present in previous works (i.e. Artiagoitia 2000, 2002b), but was never developed.

Euskaltzaindia also mentions the well known tendency (Hetzron 1978, Sproat & Shih 1988, 1991) for heavier adjectives to come after lighter ones, regardless of the noun position. Goenaga (1997) makes a similar point: color adjectives tend to be closer to the noun but, depending on the speaker's intention, the reverse is also possible.

Trask (1981, 2003) makes a short yet juicy comment on adjective ordering in Basque taking the following example as a departing point:

(5) etxe zuri txiki polit bat [Trask 1981: 137 & Trask 2003: 137]
house white small beautiful one
'a beautiful small white house'

"As illustrated here, the order of multiple adjectives in Basque is in general precisely the reverse of that in English (or, from the point of view of distance from the noun, precisely the same as in English)" (Trask 1981: 137). Nonetheless, Trask's (2003: 137-8) remarks are clear: "But other orders can occur, as in the popular song *txakur txiki gorritxo bat* (a little red dog)".

In Artiagoitia (2002b: 454), I also make clear that Sproat & Shih's alleged hierarchy is also true of Basque and give the following examples as neutral:

(6) a. lorontzi txinatar zuri txiki bat (size > color > provenance)
vase Chinese white small one
'a small white Chinese vase'
b. lorontzi zuri txiki bat (size > color)
vase white small one
'a small white vase'
c. praka urdin estuak (size/width > color)
pant blue narrow.art
'narrow blue pants'
d. mutil bilbotar handi bat (size > provenance)
boy Bilbao-suf big one
'a big Bilbao-er boy'
e. ardo beltz ona[4] (quality > color)
wine black good.art
'good red wine'

Regarding this last example, I also emphasize that the corresponding reverse order, namely:

(7) ardo on beltza
Wine good black.art
'a RED good wine'

[4] This example was perhaps not a very good one, given the semi-idiomatic use of *ardo beltz*; nonetheless, the possibility of (7) warrants that it is not fully lexicalized.

refers to a situation where *ardo on* is taken as a given or natural subset of wine and the fact that it is red ("black" in the original) is contrastively focused. These observations are corroborated by Oskoz (2004) and Andonegi (2005), who, working within Sproat and Shih's hierarchy, conducted several surveys among speakers[5], reaching similar results.

Finally, Oyharçabal (2006) resorts to Scott's (2002) more sophisticated adjective ordering hierarchy and claims, basically, that Basque adjective ordering obeys that hierarchy. He finds the lelf members of each pair unmarked:

(8)

a.	negu hotz luzea	*vs*	negu luze hotza	(length > temper.)
	winter cold long.art		long cold.art	
	'a long cold winter'		'a cold long winter'	
b.	salda bero on bat	*vs*	salda on bero bat	(subj. eval. > temper.)
	broth hot good one		good hot	
	'a good hot broth'		'a hot good broth'	
c.	zaku pisu lodi bat	*vs*	zaku lodi pisu bat	(size > weight)
	parcel heavy thick one		thick heavy	
	'a thick heavy sack		'a heavy thick sack	
d.	bide zabal lasterra	*vs*	bide laster zabala	(speed > width)
	path wide quick.art		quick wide	
	'the fast wide path'		'the wide fast path'	
e.	mutiko gazte ederrak	*vs*	mutiko eder gazteak	(subj. eval. > age)
	boy young nice.art		nice young	
	'beautiful young boys'		'young beautiful boys'	
f.	leiho erronda handia	*vs*	leiho handi erronda	(size > form)
	window round big.art		big round	
	'the big round window'		'the round big window'	
g.	eskultura fin gora bat	*vs*	eskultura gora fin bat	(height > width)
	scuplture narrow high		high narrow	
	'a high narrow sculpture'		'a narrow high sculpture'	

[where A > B means "A is further from noun than B"]

[data from Oyharçabal 2006]

Oyharçabal (2006), apparently following Lafitte (1944), identifies the last position before the determiner as the focus position.

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[5] Incidentally, the only apparent difficulty is provided by the shape adjectives *karratu* and *borobil*, which don't show as general a tendency to precede size as one should expect. This may be because these adjectives always have three syllables and are therefore considered *heavy*.

In short, most Basque grammarians[6] have acknowledged the existence of a relative fixed adjective ordering within the noun phrase yet they have stressed the flexibility that the said ordering allows in terms of speakers' intended information-packaging. Interestingly, the adjective ordering is pretty much the same given in the literature as universal[7] in terms of distance from the modified noun; it is also worth pointing out that the adjective perceived as focus or contrastively focalized is precisely the outermost.

2. The proposal: Basque adjectives as DP-internal heads

Once we have established that Basque adjectives display the same ordering constraints that are held to be universal, let us now develop the proposal that they occupy the head position of a given array of functional categories, in line with Cinque (1994) and subsequent work.

Out of Cinque's (1994) three original arguments for analyzing DP-internal adjectives as reflecting a universal hierarchy of functional categories, two follow unproblematically: firstly, according to Cinque, the idea of a relatively fixed order within adjectives squares well with the existence of a given hierarchy of functional projections, but not with the idea of adjunction, for which one would in principle expect absolutely free ordering. Secondly, the number of adjectives allowed inside a give noun-phrase is generally limited to 6-7, a limitation that squares well with the sequence of functional projections, but not with the unlimited number allowed in adjunction operations. Although I remain agnostic with respect to this second argument[8], I shall follow Cinque in adopting this functional projection view.

Cinque's third argument is precisely incompatible with my proposal for Basque adjectives: he claims that the left position with respect to the noun needs to be stipulated on the adjunction view but follows naturally once adjectives are located in the specifier position of functional heads. My view will be precisely that adjectives occupy each the

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[6] Zabala (1999) also addresses the issue of adjective ordering but from a different angle: she follows Bosque and Picallo's (1996) division between relational and qualifying adjectives. Basque relational adjectives are hierarchically closer to the noun than qualifying, as expected:

(i)	arazo	ekonomiko larria	vs	* arazo	larri ekonomikoa
	problem	economical urgent-art		problem	urgent economical.art
	'an urgent economical problem'			'* an economical urgent problem'	

[7] No wonder this is so. In fact, Hetzron (1978) mentions Basque and even gives a couple of Basque examples in his survey of languages, and mentions precisely Larry Trask: "I am grateful to Larry Trask for his help… and for his assistance in finding other informants" (Hetzron, 1978: 183).

[8] In a language like Basque any sequence beyond two or three adjectives seems rather stilted.

head position of the relevant functional position, hence to the right of the modified noun in Basque, but in accord with the hierarchy of functional heads proposed by Scott (2002). I will return to this specifier/head dichotomy later in section 2.2.

In the remainder of this section, I will first point out the empirical advantages of my proposal; second, I will tackle the theoretical advantages of it.

2.1. Empirical arguments for considering adjectives DP-internal heads

a. The canonical position of the degree word modifying a DP-internal adjective is precisely to the left of the noun-adjective, as expected if the degree word occupies some specifier-position to the left of the functional head:

(9) a. oso emakume jatorra
very woman nice.art
'the/a very nice woman'

b. [$_{DP}$ oso [$_{FP}$ [$_{NP}$ emakume] [$_{F}$ jatorr]-]a]

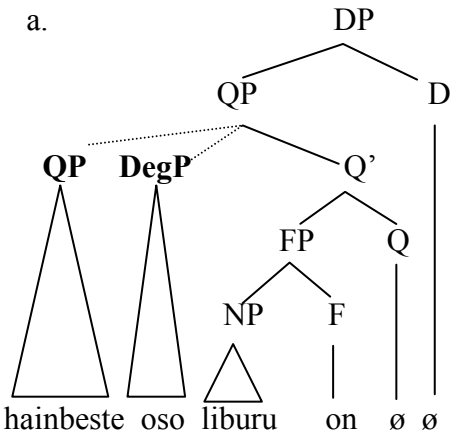
In Artiagoitia (2004: 34), I conjecture that degree words occupy in fact the same specifier position of the phrase-structurer layer where quantifiers are merged, either as specifiers or as heads. That conjecture, if correct, predicts that degree words and quantifiers will be incompatible; i.e. that they will be in complementary distribution. The prediction is borne by the data:

(10) a. * *hainbeste oso* liburu on erosi genuen.
so-many very book good buy aux
'We bought so many very interesting books'

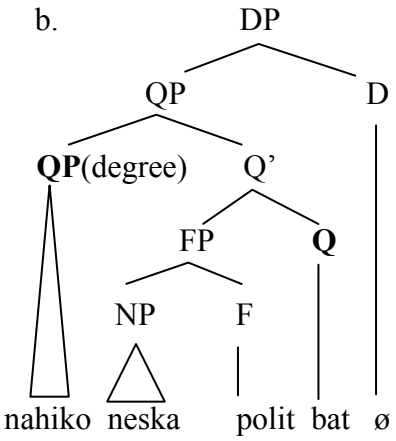
b. * *nahiko* neska polit *bat* etorri zitzaigun
quite girl beautiful one come aux
'One quite beautiful girl came to us'

[examples from Euskaltzaindia 1993: 148]

(11) a.



b.



In (10a) the prenominal quantifier *hainbeste* 'so much/many' and *oso* 'very' compete for the same and one specifier position of the QP-layer; in (16b), on the other hand, the quantifier/degree word *nahiko* 'enough, rather' is incompatible with the numeral *bat* 'one' in the head position. The data become grammatical if either offending element is removed:

(12) a. hainbeste liburu on
so-many book good
'so many good books'

b. oso liburu onak
very book good.art
'(the) very good books'

c. nahiko neska polita
quite girl beautiful.art
'the/a quite beautiful girl'

d. neska polit bat
girl beautiful one
'one beautiful girl'

The reader should note that the head status of the adjective is crucial to account both for the order of the degree word with respect to the noun-adjective pair and for the degree's incompatibility with any quantifier[9]; if adjectives were not heads, we could explain neither the canonical position of the degree word nor its incompatibility with quantifiers[10].

Admittedly, there are some speakers which accept the order [N-degree word-Adjective] inside DP:

(13) % emakume oso jatorra
woman very nice.art
'the/a very nice woman

It seems, howeer, that this order involves NP-scrambling inside DP around the degree word, possibly to make the degree word prosodically more prominent. Here is the evidence that the word order in (13) is derived by movement: this second order is impossible when the word modified by the degree word is inherently focal. As pointed

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[9] The only way to have this structure is resorting to relativization or having the adjective in postnominal predicative position:

(i) a. oso onak diren hainbeste liburu
very good.art are.comp so many book
'so many books that are very good'

b. hainbeste liburu, oso onak
so-many book very good.art
'so many books, very good'

Oyharçabal (2006) gives an analysis of postnominal predicative adjectives very much in line with Cinque's (1994), which seems to me absolutely right. He accounts for the obligatory appearance of the article as a sign of number-agreement. Alternatively, one could assume that the article realizes the head Predicate, as in Eguren (2006).

[10] In essence, we have something like a *doubly filled Q filter*: degree words (many of them true quantifiers) cannot occupy the same position as quantifiers. This is solely understood if there is no room for degree words, because DP-internal adjectives don't project as lexical APs.

out in Etxepare (2003: 546), the quantifier *gutxi* 'little, few' forces the entire DP to be in preverbal focus position

(14) a. * [*jende gutxik*] hori ikusi du.
people few.erg that see aux
'Few people saw that'

b. [*jende gutxik*] ikusi du hori.

[data from Etxepare 2003: 547]

Unusually so, the quantifier *gutxi* admits a degree word, perhaps because being a focus operator, it stands in the D position[11]; crucially the degree word has to precede NP:

(15) a. [***oso*** *jende gutxik*] ikusi du hori.
very people few.erg see aux that
'Very few people saw that'

b. * [*jende* ***oso*** *gutxik*] ikusi du hori.
people very few.erg

I take the contrast in (15) to show that the word order in (13) is possible as a consequence of NP-scrambling for prosodic reasons; but, if those prosodic reasons are absent (e.g. when the modified element is inherently focal and prominent), scrambling is banned. Therefore, the non-standard word order (13) cannot be the underlying order, but it is one derived by NP-scrambling.

The proposal that degree words occupy the specifier of QP also predicts that the former will be limited to one per DP, regardless of where degree words show up, a prediction which is also accurate:

(16) a.* [nahiko [oso neska garai] jatorr]-a
quite very woman tall nice.art
b. *[oso neska garai] [nahiko jatorr]-a
very girl tall quite nice.art
c. * neska [oso garai] [nahiko jatorr]-a
girl very tall quite nice.art
'the/a quite nice very tall woman'

In sum, the behavior of degree words inside DPs is explainable and, in fact, fully predicted by the proposal made here: if adjectives are simple heads, they cannot form a constituent with a corresponding degree word; the latter, if present at all, must be located on a different layer (here, the one reserved to quantifiers) and is, therefore, in conflict with overt quantifiers.

b. Basque DP-internal adjectives cannot take complements:

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[11] *Gutxi*, in addition to being a quantifier, is also productively used as adjective: e.g. *lo gutxia* 'scarce sleep', *denbora gutxian* 'in a short time'. This also may be the reason why it accepts a degree modifier.

(17) a. emakume harroa
woman proud.art
'the/a proud woman'

b. *emakume bere lanaz harroa
woman her work.inst proud.art
'the/a woman proud of her work'
[data from Trask 2003: 138]

(18) a. poema zailak
poem tough.art
'(the) tough poems'

b. * poema irakurtzen zailak
poem reading tough.art
'(the) tough to read poems'

The impossibility of taking complements is expected if adjectives are merged as functional heads; it is predicted that their complement will be another functional phrase (headed by a second adjective) or, else, by the relevant NP; this is exactly what we find[12] [13].

c. A third simple argument comes from the behavior of adjectives with proper names. If Longobardi (1994) is right in claiming that universally proper names are Ns that get interpreted (either as a result of overt or covert movement) under the D position, the following paradigm is revealing:

(19) a. Axular (N in D)
'Axular'

b. * t_i zahar $Axular_i$
old
'Old Axular'

c. * Axular zahar (N *in-situ*)
old
'Old Axular'

d. Axular zaharr-a (not restrictive)
old.art
'Old Axular'

e. gure/aspaldiko Axular (*a) (not restrictive)
we.gen/ long ago.of
'our Axular, Axular of long ago'

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[12] Under the traditional adjunction analysis of adjectival modification, one might regard the ungrammatical (17b-18b) as mirror-image examples of Emonds' (1978) *Surface Recursion Restriction* (mentioned in Cinque 1994: 98), which prohibits a change in the directionality of branching within a given phrase. However, it is worth mentioning that relative clauses can be either pre- or postnominal in Basque; in the second case we find a left-branching structure on a right branch:

(i) a. etorri den gizona
come aux.comp man.art
'The man that came'

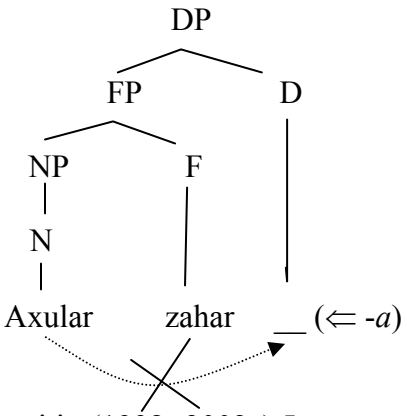
b. gizon [etorri den]-a
man come aux.comp.art

If the recursion restriction were relevant in (17b) and (18b), it should also affect (ib), but it does not. Thus, their ungrammaticality must be attributed to a different reason; I hypothesize that it is the head status of the adjective and the fact that it only may take another FP or NP as its complement

[13] My arguments for the head analysis of Basque adjectives are very similar to Abney's (1987), but note that Svenonius's (1994) and Sadler and Arnold's (1994) objections to them don't apply to Basque: adjectives don't have a phrasal appearance, only take one single degree modifier discontinous with the adjective, and they don't take complements.

In other words, Basque adjectives display a clear *intervention effect* in that they seem to block N-D movement in proper names (but not with left, phrasal, modifiers):

(20)



In Artiagoitia (1998, 2002a) I suggested that this N-D movement is covert (similar to the one in English), but given that the presence of what Longobardi (1994) calls an expletive determiner is required just in case an adjective is present, it seems that this movement must be overt, with the article required as a last resort (i.e. the proper name cannot target D, as required)[14].

2.2. Internal arguments for considering adjectives DP-internal heads

In this subsection, I give two theory-internal arguments to analyze Basque adjectives as heads; the first one is weak, the second one is more sound.

a. Several linguists have argued that a subset of prenominal adjectives in Romance and English should be considered heads and not true phrasal categories. This class includes *mere*/*mero, utter, solo* and ambiguous adjectives like *pobre/poor, cierto/certain* or *simple*. Cinque (1994) ultimately argues against the distinction. Nonetheless, it is worth mentioning that the Basque adjectives which correspond to the ones regarded as head-like in other languages display similar restrictions: they cannot be used predicatively or in copular position (21) and cannot be further modified (22). The adjectives *huts, soil* 'bare, mere' and *ohi* 'former' are good candidates for what we say:

(21) a. *Jonen emaztea ohia da
.gen wife.art former.art
'*John's wife is former'

b. *Jonen emazte bat ohia
wife one former.art
'* one of John's wife, former'

c. ?? Arazoa {hutsa, soila} da

d. * arazo bat {hutsa, soila}

[14] Joseba Lakarra (p.c.) points out that proto-Basque had no adjectives. If adjectives are a closed category, it means they are a functional category. Their present status in modern Basque as functional or semi-functional heads can be taken as a reflection of a previous state of affairs where the language simply had few or no adjectives at all.

problem.art bare.art
'*the problem is bare'

problem one bare.art
'*one problem, bare/utter'

(22) a. * oso emazte ohia
very wife former.art
'the/a very former wife'

b. * nahiko arazo {huts, soil}-a
quite problem bare.art
'the/a quite bare/utter problem'

Berstein (1993) analyzes the relevant only-prenominal adjectives as functional heads and proposes to analyze the ambiguous adjectives as bare heads when they are used *functionally*, very much in the spirit of my proposal here. What is interesting about Basque is that these alleged head-like adjectives have the same exact positioning as regular adjectives, namely between N and D:

(23) a. Jonen emazte ohi bat
wife former one
'one of John's former wifes'

b. arazo {soil, huts}-a
problem bare utter art
'the/a bare/utter problem'

In other words, there is no syntactic or word-order difference between these *mere*-type adjectives and regular adjectives. If the former are analyzed as heads, there seems to be no evidence to analyze the latter differently.

b. One of the strongest arguments for regarding DP-internal adjectives as specifiers is that such an analysis mirrors the behavior of CP-internal adverbs, which Cinque (1999) has also taken to be specifiers of functional heads in many languages. Translated to Basque, this DP/CP parallelism implies that CP-internal adverbs should be head-like. In fact, many so called modal particles manifest themselves as heads *ohi* 'usually'*, omen* 'reportedly'*, bide*'probably'… usually located between the main verb and the auxiliary. Here are some illustrative examples:

(24) a. Jon eskolara joan {*omen, bide*} da
school.to go reportedly, probably aux
' John has {reportedly, probably} gone to school'

b. Jon eskolara joan *ohi* da
usually
'John usually goes to school'

Interestingly enough, as Cinque (1999) himself acknowledges, the realization of the hierarchy of functional heads inside the clause must allow for different specifier/head realizations: adverbs are specifiers of the array of functional heads in Romance and Germanic but the same function is performed by actual functional elements in the head

position in the case of other languages, Basque itself among them[15]. Furthermore, Scott (2002) also anticipates that "it is quite possible that there exist other languages in which such DP-internal functional heads are not empty" (p. 98). In this regard, it is perhaps no coincidence that the word *ohi*, rendered by Cinque (1999: 74) as the realization of the functional category $\text{Aspect}_{\text{habitual}}$ is also an adjective with the meaning 'former' (cf. example 23a above).

Therefore, the idea that adjectives occupy nuclear positions of a universally given array of functional heads makes perfect sense, also from the point of view internal to Cinque's and Scott's own proposal: in fact, one has to assume that much variation in their approach[16]. The difficulty, of course, lies in the antisymmetry approach: if one adopts such a view, the surface order will require a rather complex set of moves for which there seems to be little motivation, so that we get *first* (e.g. the noun/verb) what it is generated *last*. If, on the other hand, one accepts the validity of the head parameter, there is not much to say about Basque adjectives and (head-like) adverbs: they follow their complement, i.e. NP or VP/IP, and they precede the next head up, viz. Q/D and Comp[17]. As the next section will hopefully show, the choice is not a simple choice of theory but also a matter of empirical verification.

In sum: section 2 has provided both empirical justification and theory-internal arguments to support the claim that Basque DP-internal adjectives occupy the head positions of the relevant functional category in a universally fixed hierarchy. The following tree diagram summarizes the proposal:

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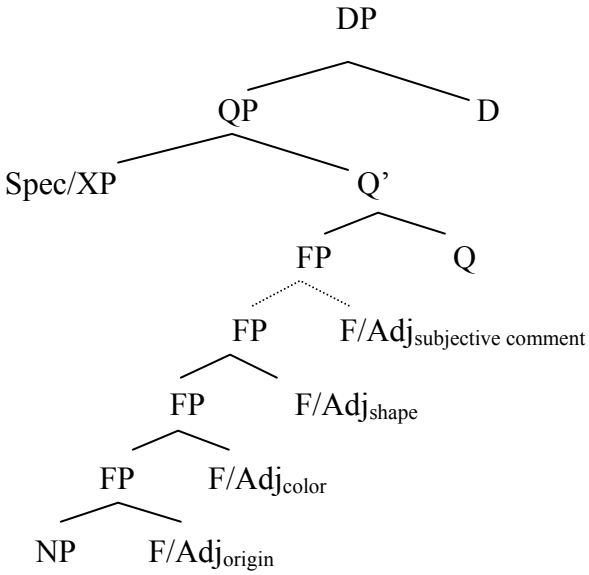
[15] What is more, work by Haddican (2004), which is about the most elaborate proposal of the antisymmetry view of the Basque clausal architecture, also reaches the conclusion that Basque modal verbs and particles occupy the head positions in the functional hierarchy of the clause.

[16] The literature also assumes that NegP is sometimes realized as specifier, sometimes as head, sometimes both (Zanuttini 1997); that IP is sometimes realized only as specifier (e.g. English with Inf realized on V), sometimes as head (e.g. Romance languages where specifiers need not filled but Inf is realized), sometimes both; that Comp sometimes is realized as head (I-C movement), as specifier, or both. In sum, there is nothing theoretically surprising in my proposal.

[17] Some complications remain, as usual. Some Basque modal particles are located between VP and Inf/Tense yet they have scope over the entire IP/TP, as noted by Haddican (2004). This is also a problem within the antisymmetry approach. For an alternative see Artiagoitia & Elordieta (in prep.).

(25)



As pointed out in Artiagoitia (2002a), although many Basque indefinite quantifiers and the numerals *bat* 'one' and -depending on the dialect- *bi* 'two' occupy the head position of Q, both numerals and heavier indefinite quantifiers, together with measure phrases, occupy the specifier position:

(26) a. bost tren
'five trains'

b. bi tren / tren bi
'two trains'

(27) a. honenbeste tren
'so many trains'

a'. * tren honenbeste

b. hainbat tren
'so many trains'

b'. * tren hainbat

c. {%asko, franko} tren
'many trains'

c'. tren {asko, franko}

d. tren gutxi
'few trains'

d'. * gutxi tren

(28) a. [hiru litro] ardo
three liter wine
'three liters of wine'

b. [galtzak bete] lan
trouser.art fill work
'enough work to fill your trousers'

As I suggested in that work, I take the fact that numerals are in complementary distribution with measure phrases to indicate that numerals truly occupy the [spec, Q'] position[18]:

[18] Alternatively, as A. Elordieta (p.c.) points out, numerals could be thought of as Q heads, but initial with respect to their complement. One must not forget that, in the clausal domain, several linguists have argued

(29) a. [hiru litro] ardo
three liter wine
'three liters of wine'

b. bost ardo
five wine
'five wines'

c. * [hiru litro] bost ardo
three liter five wine
'three liters (of) five wines'

d. * bost [hiru litro] ardo
five three liter wine
'five three liters (of) wine'

Therefore, the diagram (25) also intends to account for the distribution of prenominal (and pre-adjectival!!) quantifiers:

(30) a. *hiru* etxe txiki polit
three house small beautiful
'three beautiful small houses'

b. *hainbat* mutil frantses eder
so-many boy french beautiful
'so many beautiful French boys'

[c. ardo gorri on *bat*]
wine red good one
'one good rosé wine'

Having explained the grounds for the proposal that Basque adjectives are heads, I now turn to comparing it with Oyharçabal's.

3. A comparison with Oyharçabal's (2006) antisymmetry approach

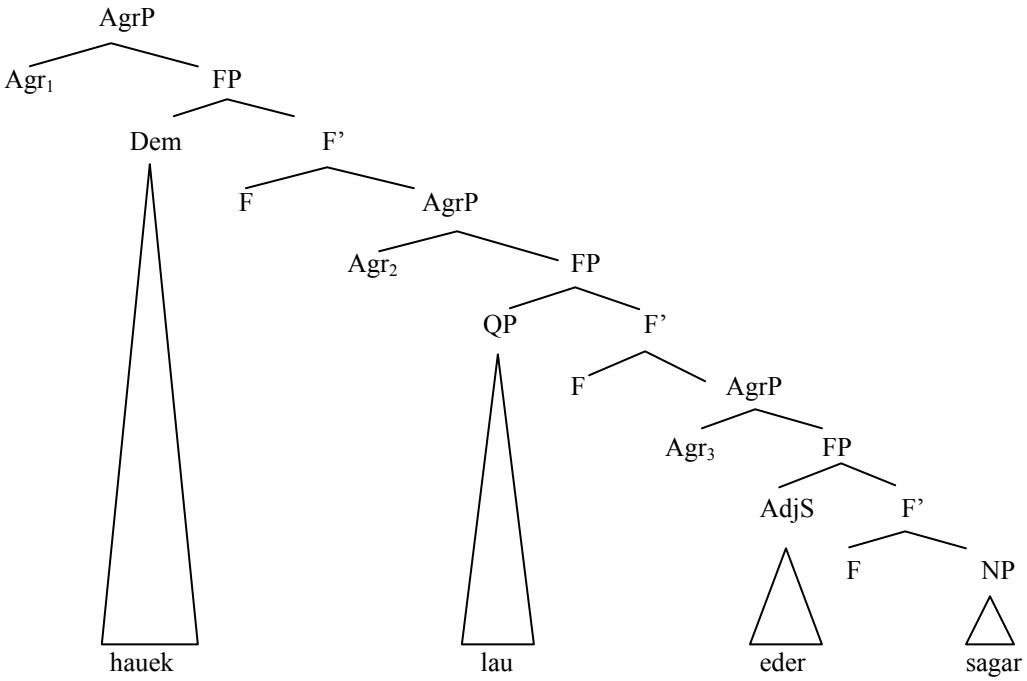
As pointed out in the introduction, Oyharçabal (2006) has developed an analysis of Basque DP-internal adjective ordering (in fact, of Basque DP-internal constituent ordering) along the lines of Cinque (1994, 1999, 2005). He takes the approach that demonstratives, numerals, adjectives and nouns are merged as in head-initial languages. Adjectives would be generated as specifiers of functional heads, just like in Cinque's approach. Thus a noun phrase like (31) would have the underlying structure in (32):

(31) lau sagar eder hauek
four apple beautiful these
'these four beautiful apples'

---

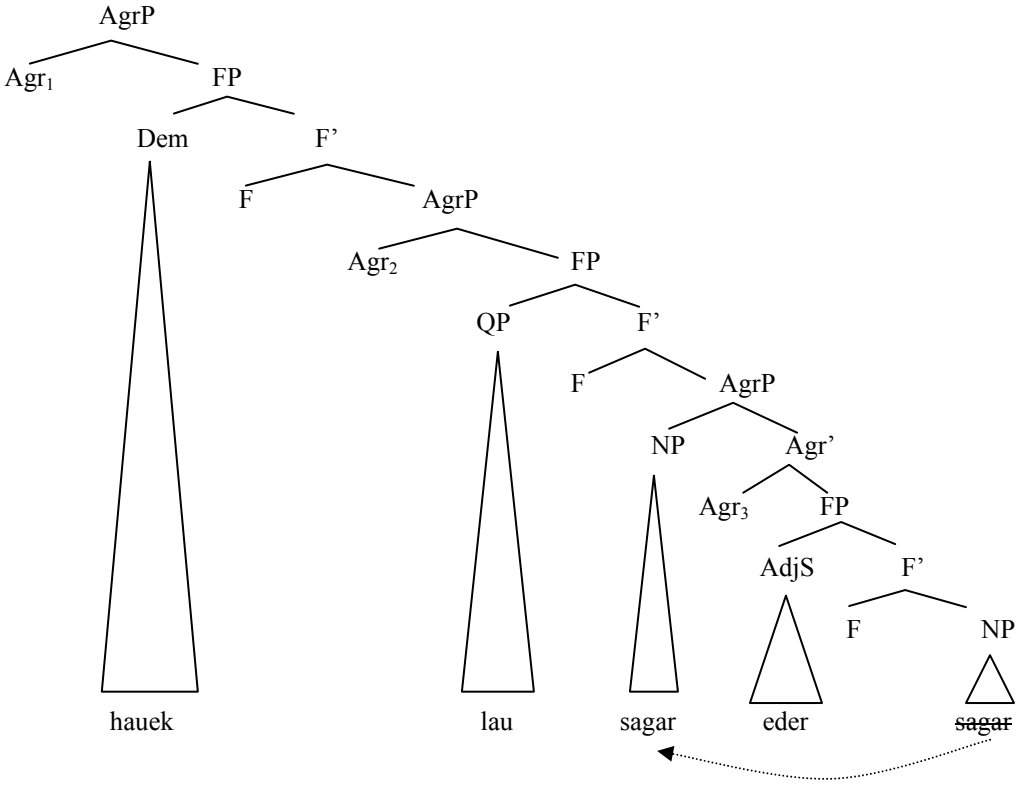
that some functional head is initial: Comp (Ortiz de Urbina 1989 and subsequent work, Elordieta 2001), Neg/Focus (Laka 1990), and even Tense (Elordieta 2001). I don't take that approach here, but it'd be worth exploring.

(32)

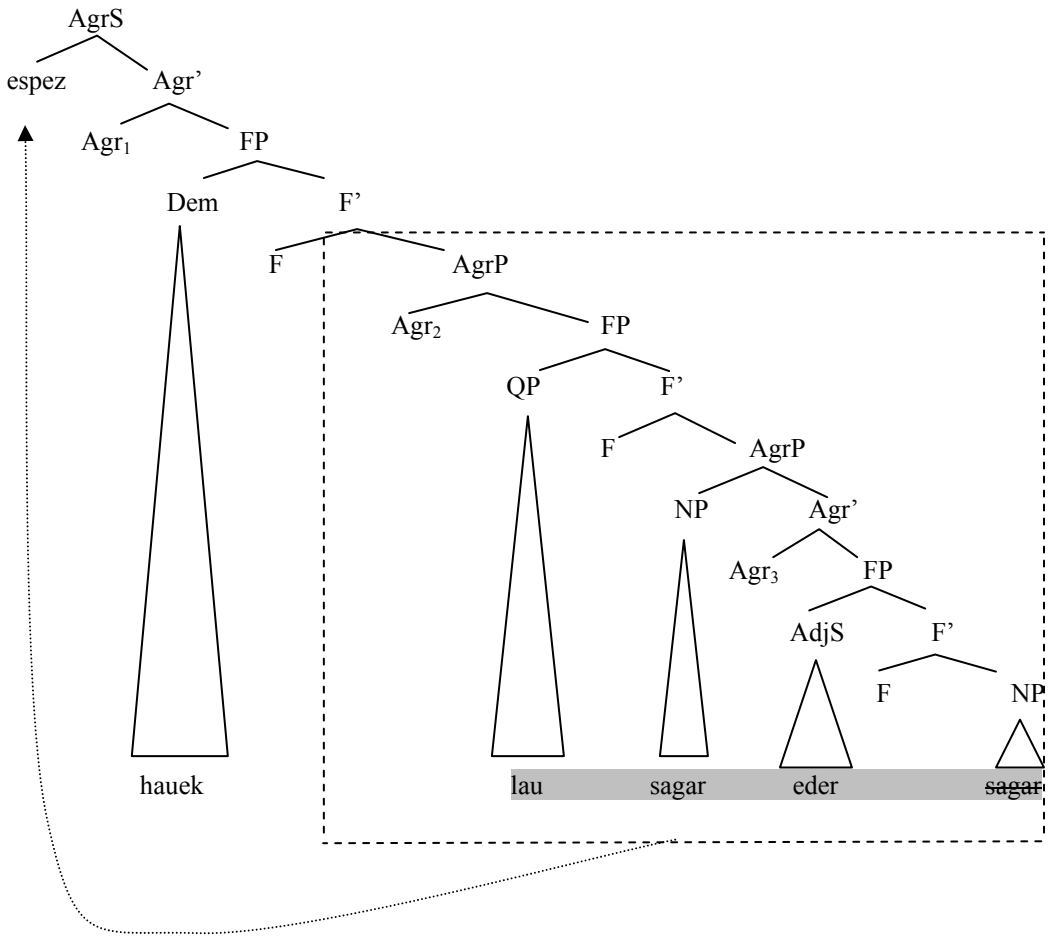


To derive the correct surface order (i.e. Num-N-Adj-D), Oyharçabal proposes NP movement to the specifier of the lower Agr projection and subsequent movement of the intermediate AgrP to the higher specifier of Agr_1, pied piping the entire [*lau sagar eder*] constituent. Schematically, in two steps:

(33) step 1



(34) step 2



The derivation of stacked adjectives procedes in a similar fashion: adjectives would be generated in the specifier of a functional category following Scott's hierarchy, and the bottom NP should move to the topmost specifier of the relevant Agreement projection to derive the N-Adj ordering; subsequent movement of the intermediate Agr-projections with the corresponding pied-piping of elements would derive the reverse order of adjectives. The derivation of a noun phrase like (35) would procede as in (36):

(35) sagar gorri eder hauek
apple red beautiful these
'these beautiful red apples'

(36) a. $[_{AgrP1}\ [_{FP1}$ hauek $[_{AgrP2}\ [_{FP2}$ eder $[_{AgrP3}$ __ $[_{FP3}$ gorri $[_{NP}$ sagar$]]]]]]]$
↑_____**1**_____↓

b.$[_{AgrP1}\ [_{FP1}$ hauek $[_{AgrP2}$ __ $[_{FP2}$ eder $[_{AgrP3}\ [_{NP}$ sagar$]_i\ [_{FP3}$ gorri $t_i\ ]\ ]]]]]$
↑_____**2**_____↓

c. $[_{AgrP1}$ ___ $[_{FP1}$ hauek $[_{AgrP2}\ [_{FP2}\ [_{AgrP3}\ [_{NP}$ sagar$]_i\ [_{FP3}$ gorri $t_i\ ]_j\ ]$ eder $t_j]]]]$
↑_____**3**_____↓

d. $[_{AgrP1}\ [_{AgrP2}\ [_{AgrP3}\ [_{NP}\ \text{sagar}]_i\ [_{FP3}\ \text{gorri}\ \ t_i\ ]]_j\ [_{FP2}\ \text{eder}\ \ t_j\ ]]_k\ [_{FP1}\ \text{hauek}\ \ t_k\ ]]$

There are three basic differences between the proposal made in this paper and Oyharçabal's approach, which I summarize below.

a. First of all, no motivation is offered for the roll-up movements required to derive the surface order. In fact, most of the XP-movements (2 for example 31, 3 for 35) seem to be required *ad hoc* just for the purpose of getting the actual surface order. In the proposal made here, no movement or special caveat is required to derive the relevant examples beyond the well justified assumption that Basque numerals are in the specifier of Q. In other words, the derivation of Basque DPs is totally simple under the head-parameter approach once we justify analyzing Basque adjectives as (functional) heads; the antisymmetry approach requires a set of XP-movements for which there seems to be no trigger or justification beyond the need to undo the effects of generating heads first and complements last.

b. Secondly, Oyarçabal's approach predicts that Basque adjectives should behave as phrasal projections; therefore, one would expect that degree words would form a constituent with the adjective:

(37) a. hauek [oso eder] sagar (underlying order for Oyharçabal)
these very beutiful apple
'these very beautiful apples'
b. % [sagar [oso eder]] hauek (expected canonical order)
'these very beautiful apples'

As explained in subsection 2.1, that order is at best optional and certainly marginal for most speakers, but never canonical[19].

c. Thirdly, the antisymmetry view to adjectives put forward by Oyharçabal also predicts that adjectives should be able to take complements, contrary to fact (cf. examples 17b and 18b above). Again, the proposal made in this article predicts the impossibility of adjective-complements, given that NP or the next functinal projection below act as complements to each adjective.

d. Fourth, and last, I see no way of deriving the intervention effect (cf. data in (19) above) on N-D raising by adjectives within the antisymmetry approach. One could

[19] Naturally, one could always posit that degree words are generated in the specifier of some functional head (e.g. QP in 32) on top of the adjective. Such a solution is, however, *ad hoc* in Oyharçabal's framework, and certainly unexpected given the phrasal nature of adjectives. It comes as a natural position if adjectives are plain heads.

possibly maintain Oyharçabal's basic approach to Basque DPs but analyze adjectives as heads (i.e. by locating each Adj in F in diagram 32, not in the specifier position), as proposed in this article. This move would have the effect of voiding the second and third advantages of my own proposal; nonetheless, the first theoretical disadvantage would not disappear and, what is more, there would be no way to derive the paradigm in (19), repeated here for convenience:

(19) a. Axular (N in D)
'Axular'

b. * t_i zahar Axular$_i$
old
'Old Axular'

c. * Axular zahar (N *in-situ*)
old
'Old Axular'

d. Axular zaharr-a (not restrictive)
old.art
'Old Axular'

e. gure/aspaldiko Axular (*a) (not restrictive)
we.gen/ long ago.of
'our Axular, Axular of long ago'

In other words, if adjectives were generated preceding nouns, the relevant intervention effect should induce an ***Adj N*** order, but never N-Adj[20]. In sum, there are still strong reasons to prefer a head-final analysis of Basque DPs.

4. Further issues

In this final section, I would like to make a few comments on issues that I feel my proposal brings up; all of them go far beyond the scope of this article, but nonetheless I would like to set the scene for future research.

4.1. A note regarding Cinque (2005) on Greenberg's Universal 20

In his critical review of Greenberg's Universal 20, namely:

(38) When any of all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite (Greenberg 1963: 87)

Cinque (2005) argues that the second part of the universal is incorrect in that it is too rectrictive and permissive and he tries to derive most of Greenberg's universal's effects

[20] I leave the article aside, which is last in DP in any case.

and exceptions based both on a unique/universal merge of functional categories and on the antisymmetry approach.

The reader might wonder how the proposal in this article bears on word order typology, since it implies that adjectives may be realized either as specifiers or as heads; in other words, does this proposal allow or predict too much word-order variation, is it too powerful? I shall sketch some rough considerations and argue that it does not.

To start with, the order expected in a head-initial language if no movement takes place is *Dem-Num-Adj-N*; this is so whether adjectives are heads or specifiers, since that won't affect linear order. In fact, most of the literature on well-known head-initial languages alternates between considering demonstratives heads (Abney 1987, Roca 1996) or specifiers (Giusti 1997, Bernstein 2001, Brugè 1996, 2002) or both (Cornilescu 1992); or between considering (some if not all) adjectives heads (e.g. Abney 1987 for English, Berstein 2003 for Romance, and Androutsopoulou 1996 for Greek) or specifiers (Cinque 1994, Scott 2002); the same is true of quantifiers (Giusti 1997, Longobardi 2001). The order expected in a head final language with no movement whatsoever is *N-Adj-Num-Dem* if all the aforementioned modifiers behave as heads. As it turns out, this order is indeed found in very many languages; this order and the former *Dem-Num-Adj-N* "are by the far the most common", as Cinque (2005: 318) himself remarks.

Interestingly, if we take into account the numerals *bat* 'one' or *bi* 'two', this is also an option in Basque:

(39) mutil eder bi hauek = N-Adj-Num-Dem
boy beautiful two these
'these two beautiful boys'

In general, Basque differs from that order because most numerals are merged in the specifier position, but more importantly, the architecture of the noun phrase is exactly the same whether numerals (quantifiers in general) are merged as heads or specifiers. Just to give an example, FP and QP ellipsis behaves in a parallel fashion with either kind of quantifiers:

(40) a. *Jonen hiru sagar gorriak* ikusi ditugu, baina *Mirenen* ***hiru*** *sagar gorriak* ez.
'We saw John's three red apples, but not Mary's three red apples'
b. *Jonen hiru sagar gorriak* ikusi ditugu, baina *Mirenen* ***bost****-ø-ak* ez.
'We saw John's three red apples, but not Mary's five [*ø*]'

(where [*ø*] = [*sagar gorri* 'red apples'])

c. *Jonen hiru sagar gorriak* aurkitu ditugu, baina *Mirenen-ø-ak* ez.
'We saw John's three red apples, but not Mary's [*ø*]'
(where [*ø*] = [*hiru sagar gorri* 'three red apples'])

d. *Jonen sagar gorri biak* aurkitu ditugu, baina *Mirenen sagar gorri* ***bi****-ak* ez.
'We saw John's two red apples, but not Mary's two red apples'

e. *Jonen sagar gorri biak* aurkitu ditugu, baina *Mirenen ø-****bi****-ak* ez.
'We saw John's two red apples, but not Mary's two [*ø*]'
(where [*ø*] = [*sagar gorri* 'red apples'])

f. *Jonen sagar gorri biak* aurkitu ditugu, baina *Mirenen-ø-ak* ez.
'We saw John's two red apples, but not Mary's [*ø*] '
(where [*ø*] = [*sagar gorri bi* 'two red apples'])

g. *Hainbeste sagar gorri* erosi dituzu ezen [[*ø*]-***asko***] hondatuko diren.
'We bought so many red apples that many [*ø*] will get rotten'
(where *ø* = [*sagar gorri* 'red apples'])

h. *Sagar gorri asko* erosi ditugu eta [***zenbait*** [*ø*]] goxo-goxoak irten dira
'We bought many red apples that several [*ø*] will get rotten'
(where *ø* = [sagar gorri])

In other words, the combination of a genitive and a determiner may license QP-ellipis, whether quantifiers precede the noun (e.g.. in example 40c; the silent structure is [QP-[NP-A]$_{FP}$]$_{QP}$) or whether they follow the noun (e.g. in example 40f; the silent structure is [[NP-A]$_{FP}$ Q]$_{QP}$. In a parallel fashion, both prenominal quantifiers (= 40b, 40h) or postnominal quantifiers (= 40e , 40g) may license empty [NP-A]$_{FP}$ constituents.

The order derived from the Basque standard choice (i.e. numerals as specifiers but adjectives as heads) is also found in some few languages. What other variation do we expect in head-final languages? As far as I can see, and without proposing any kind of movement, we could expect this much:

(41)	a. N-Adj-Num-Dem	(if all = heads)	("very many")[21]
	b. Dem-Num-Adj-N	(if all = specifiers)	("very many")
	c. Dem-N-Adj-Num	(demonstratives = spec)	("many languages")
	d. Dem-Num-N-Adj	(demonstratives, num = spec)	("many languages")[22]

[21] The first choice is at first sight indistinguishable from that of a head-intial language.
[22] This is exactly the choice made by Western Basque, where demonstratives precede the noun-phrase:

e. Num-N-Adj-Dem	(num = spec)	(“few”; Basque)
f. Num-Adj-N-Dem	(num, Adj = spec)	(“very few”)
g. Dem-Adj-N-Num	(dem & Adj = spec)	(“very few”)
h. Adj-N-Num-Dem	(Adj = spec)	(“very few”)

Crucially, the choices predicted by the kind of proposal advanced in this article are all attested. At this point, I have no principled explanation to offer as to why some choices should be less common that others; it seems, however, that a common factor is that they have adjectives as specifiers (assuming no movement has taken place).

Cinque reports five more attested word order patterns:

(42) a.	Dem-Num-N-Adj	(“many languages”)
b.	Dem-N-Num-A	(“very few”)
c.	N-Dem-Num-A	(“few languages”)
d.	Adj-N-Dem-Num	(“very few”)
e.	N-Adj-Dem-Num	(“few languages”)
[f.	N-Dem-A-Num	(“very few/spurious”)]

Again, although I have no elaborate explanation for this variation, I’d like to point out that the two most common among the five (viz. *Dem-Num-N-Adj* and *N-Dem-Num-A*) are perfectly amenable to a head-initial pattern with subsequent partial N-raising or N-D raising, movements well documented in the literature (cf. Longobardi 2001 for an overview); type (42b) also looks like a head-initial language with N-raising beyond the numeral. Type (42e), on the other hand, could also be a case of a head-final language with some Dem-Num rearrangement or, alternatively, a head-initial language with some kind of [N-A] raising to D.

Out of the 10 (or 11, if (42f) is to be excluded) word order patterns reported by Cinque to be not attested (and, hence, possibly ungrammatical), it turns out that all of them correspond to word orders impossible to derive from the hierarchy of functional projections using the head-parameter, the spec-head variation proposed in this article, or the well-known N/NP-raising phenomenon.

(i) a. hónek hiru mutil gazteok/gazteak
These three boy young.art
‘these three young boys’

b. hori gizon altuori/altua
that man tall.art
‘that tall man’

DP-initial demonstratives display some sort of agreement: the article (proximate or not) or the demonstrative itself in the singular is reduplicated. In work in progress, I link the possibility of demonstrative-initial order to the possibility of treating demonstratives as Dem-Phrases, a relatively recent change in the history of Basque.

All in all, the consequences of the proposal made here in terms of allowing variation in the functional field of adjectives are not worse than Cinque's: he, too, has to propose a fairly complex set of parametric choices to derive the fourteen attested word orders: no movement; NP-raising; pied-piping or not; total or partial movement; and the stipulation that neither head-movement nor XP-movement wihout containg NP are possible. Furthermore, although he considers both *N-Adj-Num-Dem* and *Dem-Num-Adj-N* orders equally unmarked, the derivation of the former requires three subsequent movements (NP-movement followed by pied-piping twice), the motivation of which remains totally theory-internal; the head-parameter, on the other hand, doesn't require any movement at all[23]. Thus, I conclude that the issue is far from settled, and that a close look at language particular properties remains to be done. In the meantime, I hope to have made the case for a head-final analysis of Basque adjectives.

4.2. Two notes: one on the left side, one on the right side

I have argued that Basque adjectives are generated as heads in the functional arrangement of the DP; one might ask whether there are specifier-like elements merged on the left side of the noun in Basque. The anwer is absolutely yes. The phrases headed by the functional postposition *–ko* are generated to the left[24] of the noun (Trask 1981, 1985, de Rijk 1988, Eguzkitza 1993). Not surprisingly, most of these seem to have a phrasal status:

(43) a. Bilborako bidea
Bilbao.to.of road.art
'the road to Bilbao'

b. etxe honetako jendea
house this.of people.art
'people in this house'

c. larruzko txamarra
leather.ins.of jacket
'a leather jacket'

d. bihotz oneko neska
heart good.of girl
'a girl of good heart'

e. urte biko ardoa
year two.of wine.art
'a two-year wine'

f. izugarrizko jendetza
terrible.inst.of crowd
'a terrible crowd'

---

[23] The unattested *Adj-Num-Dem-N* (the order symmetrical to a head-initial structure with N-Dem raising = 42b) is regarded by Cinque (2005: footnote 5) as a crucial proof that the antisymmetry hypothesis is correct. However, that order would only be possible in a head-final language with N-raising around Dem, but this movement will always be blocked by the intervening heads (Adj and Num).

[24] *-(t)ar* modifiers may also appear on the left, but I argue in Artiagoitia (2002b) that these are instances of N-N compounds. A similar point is made in Trask (2003: 139), an observation I was unaware of at the time I wrote that article. I was also unaware of one of Mitxelena's remarks in Villasante (1983: 141), which is relevant here: "… *bizkaitar bertsolaria* eta *bertsolari bizkaitarra* badirudi ez direla gauza bera".

Most grammarians assume that PP modifiers require *–ko* when they modifiy noun; this generalization is apparently not valid for examples (d) thru (f), where *–ko* takes [NP-Adj]$_{FP}$, QP and AP as complements[25]. The traditional analysis of these *–ko* phrase modifiers is that of NP or N'-adjuncts (Trask 1981, de Rijk 1988, Eguzkitza 1993). None of these analyses, however, has explained why the element *–ko* is required. As a future research project, it would be worth exploring the view that some *–ko* phrases are just in the specifier position of some functional head (à la Cinque & Scott), and that the element *–ko* is precisely a reflect of that specifier-head relation. Some *–ko* phrases are certainly good candidates: the *–ko* phrases that mean material must precisely be closest to the noun, in compliance with Scott's hierarchy (except that the corresponding Basque phrase is not exactly an adjective), and not surprisingly they follow quantifiers:

(44) a. Corte Ingleseko larruzko txamarrak (unmarked order)
of leather.inst.of jacket.art
'leather jackets from the Corte Inglés'
b. * larruzko Corte Ingleseko txamarrak (* as unmarked order)
c. {hiru, hainbeste} larruzko txamarra
three so-many leather.inst.of jacket
'{three, so many} leather jackets'

Whether all *–ko* phrases can be reduced to this kind of analysis or only some of them (with the rest analyzed as plain adjuncts in some cases and complements in a few cases) remains to be seen; but I simply note that this kind of NP-modifiers do not bevave as regular adjectives (i.e. heads) and, consequently, they appear on the opposite side of the noun.

I end this article with a note on DP-internal focus position: Oyharçabal (2006) follows Scott (2002) in adopting the view that there is a focus-phrase position for DPs. Unlike Scott, however, he places that FocP above the DP layer;

(45) [Pilotari gazte frantsesek] dute irabazi, ez espainolek
player young french.art.erg aux win not spanish.art.erg
'the FRENCH young players won, not the SPANISH ones'

---

[25] De Rijk (1988, 1991) proposes that *–ko* is an adjective head that invariably takes PP complements. Personally I find this characterization of *–ko* as adjective surprising (unless everything that modifies a noun is an adjective); what is remarkable, though, is that even if that proposal were correct, we'd be speaking of a full phrasal category, not a plain adjective. See Goenaga (2003) for an antisymmetric approach to *–ko* phrases, derived via predication à la Kayne (1994). Goenaga regards *–ko* as some sort of functional postposition.

(46) $[_{FS}$ Pilotari$_i$ gazte$_k$ $[_{F°}$ $[_{FocP}$ frantses$_j$ $[_{DS}$ $[_{D°}$ ak] .... t_k t_j t_i]]]
(data from Oyharçabal 2006)

Without getting into the details of all the required movements, I draw the attention to the fact that Scott's position for focus inside noun-phrases is precisely below DP. Translated to Basque, this would give the following diagram:

(47) $[_{DP}$ spec $[_{FocP}$ ***spec*** $[_{FP}$ $[_{FP}$ …. NP] … F] F] ***Foc***] D]

In other words, the focus head of Scott's Focus-Phrase should be last with respect to the adjective sequence but prior to the determiner in a head-final language. Interestingly enough, that is precisely the ordering we find in Basque when we get two of more adjectives and one of them is focalized (cf. examples 7 and 45 above). In other words, it seems that what is required is head movement of the focalized Adjective to the Focus head. Thus, we find evidence for the correctness of Scott's analysis but in a somewhat unexepected manner: if a language has adjectives as heads, they will move to focus position as a head; if it is a head-final language, this seems to imply rightward movement.

In sum, I have argued in this article that Basque DP-internal adjectives are ordered in accord with Scott's hierarchy of functional projections but that these adjectives occupy the head position, which is last or postnominal as predicted by the head parameter, and not the specifier position. This analysis is supported by, and in fact predicts, four salient properties of the Basque DP: adjectives cannot take complements; they cannot form a constituent with degree modifiers; they also block N-D movement of the type advocated in Longobardi (1994) for proper names; phrasal modifiers are to the left of the noun. I have also shown that Oyharçabal's antisymmetry analysis of Basque DP-internal ordering along the lines of Cinque (1994, 2005) is untenable. I have also argued that proposing that functional projections can vary as to whether specifiers or heads are realized doesn't overgeneralize, and that the word order variation allowed is in fact realized. My proposal implies (a) that the *adjective-as-specifier* analysis is independent of the existence of a given hierarchy of functional categories; (b) that UG must allow for spec/head realization variation also in the DP-field; and (c) that, with respect to the DP-internal architecture, there are alternative and more satisfactory analyses of head-final languages than antisymmetry.

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