

An approach to Basque adnominal PPs¹

1 Introduction

This paper deals with the licensing of adnominal PPs in Basque.² PPs in Basque can be freely used as adverbials as shown by (1). The adnominal use, though, is licit only in the presence of the morpheme *-ko*, as exemplified by the contrast between the examples in (2) and (3).

- (1) *Etxe aurre-an zuhaitz-a dago.*
 house front-LOC.SG tree-DET is.located
 'In front of the house is a tree.'

- (2) * [_{DP} *etxe aurre-an zuhaitz-a*]
 house front-LOC.SG tree-DET

- (3) [_{DP} *etxe aurre-ko zuhaitz-a*]
 house front-KO tree-DET
 'the tree in front of the house'

The sentence in (1) also shows that there is nothing wrong in principle with the linear order of the PP *etxe aurrean* and the DP *zuhaitza*. Instead, I argue that that *-ko* is an attributive linker in den Dikken & Singhapreecha's (2004) terms, as suggested by von Prince (2008: ch.9). Attributive linkers have been described as a class of morphemes found in a variety of languages that can take various categories as their complement and turn them into attributes of a noun (von Prince 2008). I suggest an analysis of *-ko* as a linker, heading an additional functional projection at the high end of the extended projection of postpositions.

This paper is organized as follows: The next section presents the empirical base. Section 3 sketches three recent (classes of) analyses of attribution and attributive linkers, as well as a short illustration of current approaches to the structure of PPs. Then, in section 4, I will argue for an analysis in terms of those theories that assume a dedicated functional head to mediate the relationship between modifier and modifiee. I will discuss how the two approaches compatible with this idea figure in this respect and investigate how they relate to each other. The final section will wrap up my proposal.

2 Adnominal PPs

In this section I will review applications of the *-ko* morpheme with (adnominal) PPs, and add some remarks on the further distribution of *-ko* as an attributive linker in Basque. Before turning to the data, though, some preliminary remarks are in order, so as to clarify my basic assumptions.

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²Being head-final, Basque unsurprisingly has postpositions. The term PP should be read accordingly. Regarding the PP status of adverbial cases, cf. de Rijk (1993) and the discussion in section 2.

2.1 Preliminaries

I will assume with Eguzkitza (1993) that DPs marked by the so called adverbial cases in Basque can be treated on par with PPs.³ For ease of exposition, I will assume - contrary to Eguzkitza (1993) - that they themselves head the PP instead of being a morphological reflection of a phonologically empty P head (cf. Asbury 2008: ch. 2 for discussion and an argumentation for the P status of Hungarian adverbial case endings). As – apart from notational considerations – this does not seem to affect the argument to be advanced here, I will not make a strong case for it.

Figure 1: Inflectional paradigm of leku ‘place’ – excluding the proximal plural, the partitive, prolative and the “relational” case (Hualde & Ortiz de Urbina 2003: 173, Table 59)

	INDEFINITE	DEFINITE		Translation
		SG	PL	
ABSOLUTIVE	leku	lekua	lekuak	-
ERGATIVE	lekuk	lekuak	lekuek	-
DATIVE	lekuri	lekuari	lekuei	-
GENITIVE	lekuren	lekuaren	lekuen	of a place
BENEFACTIVE	lekurentzat	lekuarentzat	lekuentzat	for a place
COMMITATIVE	lekurekin	lekuarekin	lekuekin	with a place
INSTRUMENTAL	lekuz	lekuaz	lekuez	with a place
LOCATIVE	lekutan	lekuan	lekuetan	at a place
ABLATIVE	lekutatik	lekutik	lekuetatik	(away) from a place
ALLATIVE	lekutara	lekura	lekuetara	to a place
DIRECTIONAL	lekutarantz	lekurantz	lekuetarantz	towards a place
TERMINATIVE	lekutaraino	lekuraino	lekuetaraino	up to a place

An initial reason to assume a differentiation between the “grammatical” cases (the upper part of Figure 1) and the adverbial cases (the lower part) is plainly the way they tend to be expressed cross-linguistically: The adverbial cases by and large correspond to adpositional expressions in languages with a clear-cut class of Ps.

Moreover, DPs bearing the “grammatical” cases Absolutive, Ergative and Dative are marked on the auxiliary in Basque. In contrast, nouns bearing one of the “adverbial cases” do not trigger any marking on the auxiliary. As the genitive is restricted to the nominal domain, this argument does not bear on its classification.

Closer to the following discussion, nouns marked by the grammatical cases cannot appear as complements of the morpheme *-ko*, which is under consideration here (4a). This is no problem for the adverbial cases (4b), which pattern with other postpositional phrases (4c). The structure for adverbial “cases” that I will therefore assume is illustrated in (5).

- (4) a) * *etxe-ri-ko-a*
house-DAT-KO-DET
- b) *harri-z-ko-a*
stone-INSTR-KO-DET
'the one made of stone'

³I will not deal with the partitive and prolative cases, although they seem to fit in with the grammatical cases. Cf. Hualde & Ortiz de Urbina (2003, 184f.) for some remarks on their use.

- c) *fonetika-ri buruz-ko liburu*
 phonetics-DAT about-KO book
 'a book about phonetics'

Hualde & Ortiz de Urbina (2003:189)

- (5) *harriz*⁴ 'with/out of stone'
 [[harri]_{DP} -Z]_{PP}

2.2 The data

With these remarks in mind, we can turn to some data. In this section I will illustrate the dependence of adnominal PPs in Basque on the presence of the *-ko* morpheme. Unless indicated otherwise, the data are from my own elicitation sessions with two consultants, both native speakers of Basque from the area of Gipuzkoa. The reader is reminded that the judgements are not concerned with the mere possibility of finding a given string of words, e.g. a PP followed by a DP, but with an attributive reading, presumably corresponding to a structural configuration like (4), where a PP and the following NP form a constituent.

- (6) [[PP NP]_{NP} D]_{DP}

For reasons of space, I can only provide a couple of examples illustrating the phenomenon. All of the “adverbial cases” in Figure 1 need to appear with *-ko* if used adnominally, e.g. the benefactive (7), commitative (8), instrumental (9), locative (10) and allative (11), can be used adnominally in the presence of *-ko*. The same goes for “ordinary” PPs (12).

- | | |
|--|--|
| (7) a. <i>ama-ren-tza-ko opari-a</i>
mother-GEN-BEN-KO present-DET
'the present for the mother' | b. *[_{DP} <i>amarentzat oparia</i>] |
| (8) a. <i>gu-reki-ko jarrera</i>
1PL-COM-KO opinion.DET
'the behaviour towards us' ⁵ | b. *[_{DP} <i>gurekin jarrera</i>] |
| (9) a. <i>harri-z-ko eliza</i>
stone-instr-ko church.det
'the stone church' | b. *[_{DP} <i>harriz eliza</i>] |
| (10) a. <i>mendi-eta-ko haitzulo-a-k</i>
mountain-LOC.PL-KO cave-DET-PL
'the caves in the mountains' | b. *[_{DP} <i>mendietan haitzuloak</i>] |
| (11) a. <i>Thessaloniki-ra-ko hegaldi-a</i>
Thessaloniki-ALL-KO flight-DET
'the flight to Thessaloniki' | b. *[_{DP} <i>Thessalonikira hegaldia</i>] |
| (12) a. <i>gizon-en-gati-ko arazo-a-k</i>
man-GEN.PL-because.of problem-DET-PL
'the problems because of men' | b. *[_{DP} <i>gizonengatik arazoak</i>] |

In a nutshell, the crucial observation is that in all of the above examples the presence of the linker *-ko* is obligatory, i.e. without its presence no attributive relationship can be established between a PP and a potential head noun.

⁴I assume an empty D head for non-definite *harri*, but an analysis in terms of a mere NP is equally feasible.

⁵retrieved from <http://omina3.blogspot.com/2010/05/gurekiko-jarrera.html> on 31 May 2011

It should be noted that the distribution of the linker *-ko* in Basque is even more pervasive. In addition to the PP complements discussed so far, the morpheme appears where adverbs, non-finite and finite adverbial and complement clauses, and possibly bare NPs, are to be used adnominally. A concise overview and further examples are provided by Hualde & Ortiz de Urbina (2003, 144-148). The following examples are adapted from there to illustrate the use of *-ko* as licensing the adnominal use of adverbs (13) and finite clauses (14). The glosses are my own.

- | | |
|--|--|
| (13) <i>atzo-ko</i> <i>egunkari-a</i>
yesterday-KO newspaper-DET
'yesterday's newspaper' | (14) <i>izarr-a</i> <i>agertu</i> <i>zitzaiene-ko</i> <i>garai-an</i>
star-DET appear AUX.COMP _{en} -KO time-LOC
'at the time when the star appeared to them' |
|--|--|

The questions raised by the latter three classes of complements have to remain unaddressed here. Nonetheless, a unified analysis of *-ko* as a linker seems eventually inevitable to me.

3 Theoretical basis

3.1 Approaches to attributive linking

In this section I will shortly recount three classes of proposals for the structure of attributive modification, in particular regarding the role of attributive linkers.

Den Dikken & Singhapreecha's (2004) analysis of attributive linkers is based primarily on French and Thai data and involves Predicate Inversion (PI), i.e. movement of a predicate around its subject. Linkers are claimed to be semantically void markers of movement of the modifier-predicate around the head noun and to be obligatory in quantificational contexts, in particular with *wh*-phrases, indefinite pronouns and in focus constructions. PI supposedly gives rise to an inverted information structure (IS), such that the inverted predicate is interpreted as given information, like in *John is my best friend* vs. *My best friend is John*. Inversion implies that there should be two sorts of constructions, basic and inverted. Accordingly, their examples include pairs of attributive structures with and without linkers, where the former supposedly show an inverted IS.

The other two approaches resemble each other in that they both assume a functional projection as mediator of attributive relations. Rubin (2002, 2003) proposes to introduce a new functional head *Mod* at the high end of modifying phrases to that end. Additionally, it supposedly serves to mark the application of pair-Merge in the syntactic derivation, introducing adjuncts, instead of set-Merge, which introduces arguments (e.g. Comsky 2001).

Struckmeier (2007, 2009) and von Prince (2008), on the other hand, extend the notion of the established head *C* to include German NP-internal agreement marker and attributive linkers in Mandarin Chinese, Hindi and Swahili respectively. Like Rubin, they assume that these represent functional heads that establish the attributive relationship between their complement and the head noun they are adjoined to. They do not, though, propose an inherent connection between linkers and the type of syntactic Merger. Some consequences of that difference will be discussed in section 4.

3.2 The higher end of PPs

Regarding the internal structure of PPs, several recent proposals have advanced the idea that they show a similarly fine-grained skeleton of functional projections as the sentential and nominal projections (cf. Koopmann 1997 and den Dikken 2006 among others). Indeed, parallels between these domains have been suggested.

For current purposes I will not go into the details of the different proposals. Relevantly for my argument, Koopmann (1997) and den Dikken (2006) assume the availability of a C projection at the high end of the extended projection of P, motivated mainly by the possibility of certain types of pronouns to move out of the PP in Dutch.⁶ While Koopmann restricts C to Place, den Dikken's model assumes a possible C at the top of both the Path and Place projections as depicted in (15).

$$(15) \quad [_{CP(Path)} \mathbf{C(Path)} [_{DegP(Path)} Deg(Path) [_{PathP} Path [P_{Dir} [_{CP(Place)} \mathbf{C(Place)} [_{DegP(Place)} Deg(Place) [_{PlaceP} Place [_{AgrP} Agr [_{PP} P_{Loc} DP]]]]]]]]]]]]]$$

While I will not concern myself with the inner structure of PPs in any depth here, these proposals about the structure of PPs offer an independent indication that more functional structure is present in PPs than meets the eye. Incidentally, these accounts choose to label the highest (available)⁷ functional projection as C, thereby opening up a parallel to one of the above classes of theories of attribution.

4 Licensing attributive PPs

In this section I will outline an analysis for Basque *-ko* as realization of a functional head at the high end of the extended projection of PPs. This relates to the two previously introduced theories of attribution assuming that a functional head, either Mod or C, is responsible for attribution. Remember that the data presented in section 2 has shown that the *-ko* morpheme appears obligatorily on the right edge of a number of categories in adnominal contexts, in particular that its presence is mandatory for licensing PPs in adnominal position. Now what is it that brings about the obligatoriness of *-ko*, and how does it figure in the grammatical system of Basque?

Part of my answer to the first question relates to the crucial role of *-ko* at the syntax-semantics interface, which cannot be addressed here because of space limitations. On the other hand this question is also closely related to the syntactic analysis of *-ko*, and the issue of its role in the grammatical system at large, which we are going to be concerned with here.

Traditional descriptions of Basque often classify *-ko* as part of the case system, in particular as a “locative genitive”. Even taking into consideration the possibility of compound postpositions, this seems flawed in the light of the distribution of *-ko* as presented in the data section: It attaches to many

⁶Note that in these models P is viewed as a lexical head having its own extended projection. I will refrain from further addressing the issue of whether P is lexical or functional here, but my point should in principle be valid for both kinds of views.

⁷“Functional structure, then, is called upon selectively, not omnipresent (contra Cinque, 1999, for instance).” (den Dikken, 2006, 1)

PPs that are not spatial (7a, 8a, 9a, 12a), and even in the spatial PPs it would be rather unexpected to find a locative P following a directional one like in (11a) above: Usually, directional PPs are unanimously assumed to be structured the other way around: A locative projection is dominated by the directional one, and therefore linearly precedes it in the case of Basque, cf. also (15). Even invoking postsyntactic processes of morpheme reordering to account for this phenomenon cannot solve the problem of non-spatial complements. The further uses of *-ko* with adverbs and finite clauses, cf. section 2.2, are even harder to reconcile with a locational case marker/postposition analysis in a meaningful way. It seems that the “locative genitive” classification does not offer a particularly helpful description, let alone an explanation for the distribution of *-ko*.

Nonetheless, the characterization as “genitive” contributes a helpful intuition about the relational property which seems to be the actual role of *-ko* – hence its more helpful description as a relational suffix in Hualde & Ortiz de Urbina (2003). Nonetheless, they include it in their list of case endings, an analysis I will not adopt because it would force us to assume a very broad notion of what (even morphological) “case” means, rendering it too blurry to be of much use.

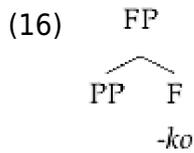
In the following, I want to establish that *-ko* is a realization of a functional category. Consider Abney’s (1987: 43f.) characteristics of functional elements :

1. Functional elements constitute closed lexical classes.
2. Functional elements are generally phonologically and morphologically dependent. They are generally stressless, often clitics or affixes, and sometimes even phonologically null.
3. Functional elements permit only one complement, which is in general not an argument. The arguments are CP, PP, and (I claim) DP. Functional elements select IP, VP, NP.
4. Functional elements are usually inseparable from their complement.
5. Functional elements lack what I [Abney; GH] will call “descriptive content”. Their semantic contribution is second-order, regulating or contributing to the interpretation of their complement. They mark grammatical or relational features, rather than picking out a class of objects.

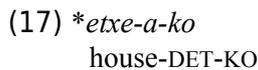
Almost all of them apply to *-ko*. Even pending further insights into what – if any – other elements might be belonging to the same category as *-ko* (possible candidates being the relative marker *-n* and the genitive marker *-en*), it seems clear that the number of members is fairly restricted. Quite obviously, the linker is phonologically dependent and inseparable from its complement. Also its semantic contribution can, as noted before, be characterized in the manner proposed by Abney as “regulating the interpretation of [its] complement”. The only property with a problematic result is the third one: While I am only dealing with PP complements in this thesis, from the overview at the end of section 2 it seems that *-ko* can take various other complements, such as Adverbs, TPs and CPs.

As Abney (1987, 43) notes, however, “none of the [...] properties are *critical* for classification as a functional element”. So under the assumption that *tertium non datur*, i.e. something is a functional category or not, I submit that the evidence supporting an analysis as a functional element by far

outweighs the possible complications. Abstracting from possible additional functional structure, this yields a minimal configuration with a functional element taking, for the present data, PP as its complement (16). In principle, this works analogously for complements of other categories.



Now let us proceed to ponder what kind of functional category *-ko* may realize. An alternative to the analysis as a case marker mentioned before might be to sever *-ko* from the grammatical cases and to treat it as a postposition. This is done by Eguzkitza (1993), in analogy to the analysis of the adverbial cases put forward in section 2. If one is ready to adopt the view that adpositions are a functional category, this seems a valid option indeed. The fact that the linker takes a variety of complements other than NP/DP might be seen as an admissible extension of our understanding of P in the light of the provisions that had to be made above for the violation of Abney’s third criterion (only complements of one type). Nonetheless, this kind of extension would mean that we have a member of P that does not only take arguments other than DP, but indeed cannot take DP complements at all (17).



This is contrary to the behaviour typically expected for P cross-linguistically: While cases of Ps have arguably been observed to occur with non-DP complements, e.g. *before he came*, and have even given rise to analyses collapsing the categories P and C (Emonds 1985), it is still part of their core properties that they can take DP as complement. I therefore think the costs for a P analysis of *-ko* are overly high, considering that presumably less costly, and possibly more insightful, alternatives are available.

Another approach I want to reject is den Dikken & Singhapreecha’s (2004) Predicate Inversion account for attributive linkers. The interpretive effects said to be indicative for PI are not found with *-ko* phrases, i.e. they do not show any special information structure. Moreover, this theory assumes that the linker is a semantically empty element inserted into a head position – which I understand to mean that the linker itself does not project. I see no convincing reason, though, to assume that *-ko* is *not* heading its own phrase: The behaviour of *-ko* phrases seems to be determined exactly by *-ko*, the common element in the variety of possible expression involving the linker, which makes it natural to assume that *-ko* is in fact the head of the phrase. Eventually, at this point in the discussion it should be clear that *-ko* represents a functional category with some interpretive contribution (even if no “descriptive semantic content”), namely the establishment of a relation between its complement and its head noun.

As for functional categories such as T or D, they seem to lack even an initial plausibility, as they are associated with temporal properties and argumenthood or individual reference, respectively. This leaves us with the two options taken by the two remaining theories for attributive linkers reviewed

above: either to extend the notion of C to include *-ko* (Struckmeier 2007 and subsequent work; von Prince 2008) – let me refer to this as the C-approach; or to introduce a new functional category – call it the Mod-approach (Rubin 2002).

Superficially, it seems that both approaches agree in holding a functional element in the extended projection⁸ of (attributive) modifiers, responsible for bringing about attribution and differ only in its labelling. As the theoretical status of labels is not quite clear, I deem it worthwhile to leave aside mere notational issues and to attempt, instead, to go to the roots of the difference between these approaches.

There we find Rubin’s strong claim about the role of Mod in structure building, namely that it triggers pair-Merge and thereby “creates” adjuncts. Consequently, his Mod covers adnominal as well as adverbial modifiers (including both manner and sentential adverbs if my understanding is correct). The C-approaches at large, on the other hand, assume adjunction without relating it to the head of attributes in particular, and therefore do not include adverbials.

Both analyses imply a larger system of assumptions about the relation between certain functional categories. In accordance with his claim about the workings of adjunction, Rubin’s Mod-approach relies on their function as the “glue” of structure building, discerning C and D as responsible for the argument status of their complements (in extension also for main clause C, cf. Rubin 2002: ch.5, fn.4) from Mod as identifying its complement as a modifier. In contrast, the C-approaches concentrate on the impact of the functional heads at the conceptual-interpretive interface, i.e. on the way (independent reference vs. restriction of reference) they induce reference to what (indices, or sentential reference, vs. individuals). Figure 2 visualizes these relations.

Figure 2: Referential systems

	indices	individuals		sentential	nominal
independent	C _{main} /R1	D/R3	argument	C	D
restrictive	C _{subord} /R2	CGN,AL/R4	modifier	Mod	
	a) C-approach			b) Mod-approach	

The display for the Mod-approach is my interpretation of Rubin’s exposition. The one for the C-approach is largely adapted from Struckmeier (2007: 169), in particular the alternative R labels for “referential head”. The fact that Struckmeier introduces these shows that the labelling difference between the Mod- and C-approaches is indeed just that: As a matter of fact, the C-approaches also introduce a “new” functional head, and at least Struckmeier implies an additional distinction between main and subordinate C.⁹

Thus, the choice of C as a label for CGN and AL seems to be mainly a pointer to the parallel between Struckmeier’s R2 and R4 in terms of their role as restrictor (cf. especially von Prince 2008: 42f. for an argument along this line), and might additionally owe to an implicit convention that it is often C or an equivalent (D) that closes an extended projection. Here we see a relation to den Dikken’s

⁸In fact, only Rubin is explicitly applying this notion, for the C-approaches it is my interpretation.

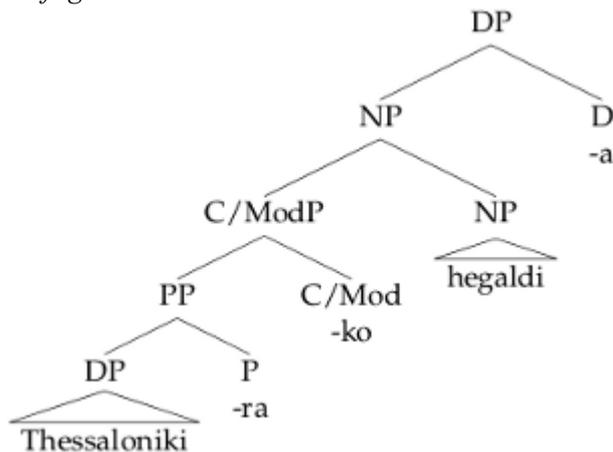
⁹Von Prince restricts her findings to the "restrictive reference" line in Figure 2.

(2006) C(Place) and C(Path) again, which are the highest heads in the extended projection of PP in his conception. Labelling, anyway, is not the defining difference between the C- and Mod-approaches.

In fact, it seems that regarding nominal modification – the lower right corner in both of the above representations – both theories are indiscernible in practice. An empirical domain – apart from plain adverbs that do not seem to figure at all in the C-approach system – for which I assume them to make different predictions are complementizers: In my understanding the complementizers that introduce complement clauses (that, if) should fall in the R2 category of the C-approach and pattern with adverbial complementizers (*when, while*), while for the Mod-approach the former assimilate to (plain) C and the latter to Mod.

On the present dataset, however, a decision for either of the models is not possible, as the dataset neatly falls into the R4 or “lower right” category, providing support for either approach without discriminating between them. This corroborates the analysis of *-ko* as a functional category at the top of the extended projection of various categories, in the present case of P, yielding, for example, the structure in (18) for the DP in (11a).

(18) *the flight to Thessaloniki*



Now we can begin an answer to the initial question about the obligatoriness of *-ko*. The C-approach tells us that *-ko* is crucial in restricting reference to individuals, that is for the establishment of an attributive relation between an NP and another constituent. If *-ko* is lacking, this relationship cannot be established. As a matter of fact, my informants’ comments strongly support this: In the absence of *-ko* they would not always give a negative grammaticality judgement at once, but sometimes propose to finish the utterance with a verb allowing them to construe the PP as an adverbial.

The Mod-approach makes an even stronger prediction because here the presence of *-ko* is an essential marker for the computational system for the introduction of its complement PP into the syntactic derivation by means of pair-Merge. In the absence of the linker, the PP would and could only be set-Merged – which would at least yield a different structure from the desired attributive one, or possibly prevent the derivation from converging altogether.

5 Conclusion

In this paper I have investigated adnominal PPs in Basque. They mandatorily contain the morpheme *-ko* that is absent outside the domain of nominal modification. I agree with von Prince (2008) that this morpheme is an instance of the class of attributive linkers that have been observed in a host of different languages and argue for an analysis of this linker as a functional head in the extended projection of P (and presumably of other categories that appear as modifiers as well). This relates to recent proposals for the internal structure of PP, on the one hand, which have proposed rich functional structure on top of the bare PP. On the other hand, my analysis is related to a set of theories of modification which hold that some functional head is responsible for bringing about the attributive relation between an attribute and its head noun. This functional category has been classified as either a variety of C or a new head Mod. The current dataset is compatible with both approaches, for a differentiation it will probably be necessary to take into account data concerning the distribution of subordinate C, for which the Mod-approach seems to predict a split between items introducing adverbial vs. complement clauses.

Further questions, e.g. regarding the semantics of *-ko* and other linkers, will have to remain unaddressed here, but I am confident that further investigation on that area can contribute largely to our understanding of the workings of modification in general.

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