

The Licensing of Adnominal PPs

The case of Basque –ko

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Topic of the talk

- (1) *the tree in front of the house*
- a. * [DP etxe aurre-an zuhaitz-a]
house front-LOC.SG tree-DET
- b. [DP etxe aurre**ko** zuhaitza]
- (2) Etxe aurre-an zuhaitz-a dago.
house front-LOC.SG tree-DET is
“In front of the house is the tree.”

Hypothesis

A **functional head** at the top of the extended projection of PPs in Basque mediates the attributive relation of modifier and modifiee. This head is spelt out by the morpheme *-ko*, which belongs to the group of **attributive linkers** noted to indicate attributive relations across a variety of languages.



Outline

- ① The phenomenon
- ② Theoretical Basis
- ③ Application and open ends

Outline

① The phenomenon

② Theoretical Basis

③ Application and open ends

“Relational” -ko in Basque

- used in adnominals (i.e. for attribution)
- located on the right edge of its complement
- classically analyzed as a “locative genitive” case ending
- Eguzkitza (1993) treats *-ko*-phrases as PP adjuncts to \bar{N}
- de Rijk (1993:149) characterizes *-ko* as “linking to a following NP any syntactic phrase enjoying PP status, including even complementizer-bearing clauses”



Adnominal uses of *-ko*-phrases

a wide range of complements (cf. Hualde & Ortiz de Urbina 2003:144-148):

adverb	{ lexical adverbs adverbs made by suffix <i>-la(n)</i> morphologically complex adverbs adverbs constructed from NPs by <i>-ka</i>
non-finite clause	{ adverbial participles with <i>-ta/- (r)ik</i>
finite clause	{ finite adverbial clauses finite complement clauses
PP	{ “ordinary” PPs NPs marked for comitative case NPs marked for instrumental case NPs marked for any local case
bare NP (??)	

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bare NP (??)	

Assumption

Adverbial case markers in Basque, i.e. the cases apart from ergative, absolutive and dative (and possibly genitive), **are (reflexes of) postpositions** (cf. Eguzkitza 1993; also Asbury 2008 for Hungarian).



with “ordinary” PP

- (3) Muga-rik Gabe-ko Sendagile-a-k
border-PART without-KO doctor-DET-PL
“Doctors Without Borders”

Commitative and Instrumental

(4) *commitative case*

emakume-eki-ko diskriminazio-a
woman-COM-KO discrimination-DET

“discrimination against women”

(5) *instrumental case*

euskara-z-ko hitzaldi-a
Basque-INSTR-KO lecture-DET

“a lecture (given) in Basque” Hualde & Ortiz de Urbina (2003:146)



with NP marked for any local case

(6) *mendi-etan in the mountains*

- a. mendi-eta-ko haitzulo-a-k
 mountain-LOC.PL-KO cave-DET-PL
 “the caves in the mountains”

Hualde & Ortiz de Urbina (2003:145)

(7) *Thessaloniki-ra to Thessaloniki*

- a. Thessaloniki-ra-ko hegaldi-a
 Thessaloniki-ALL-KO flight-DET
 “the flight to Thessaloniki”



Missing -ko is fatal to attribution

(8) *Doctors Without Borders*

- a. * [_{DP} Muga-rik Gabe Sendagile-a-k]
border-PART without doctor-DET-PL
- b. Mugarik Gabeko Sendagileak

(9) *a lecture (given) in Basque*

- a. * [_{DP} euskara-z hitzaldi-a]
Basque-INSTR lecture-DET
- b. euskarazko hitzaldia

(10) *the flight to Thessaloniki*

- a. * [_{DP} Thessaloniki-ra hegaldi-a]
Thessaloniki-ALL flight-DET
- b. Thessalonikirako hegaldia



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Extended Projections for PPs

- usually a rich functional structure is assumed in the sentential and nominal domains, e.g. something like (11) and (12)

(11) *sketch of the sentential projection:*

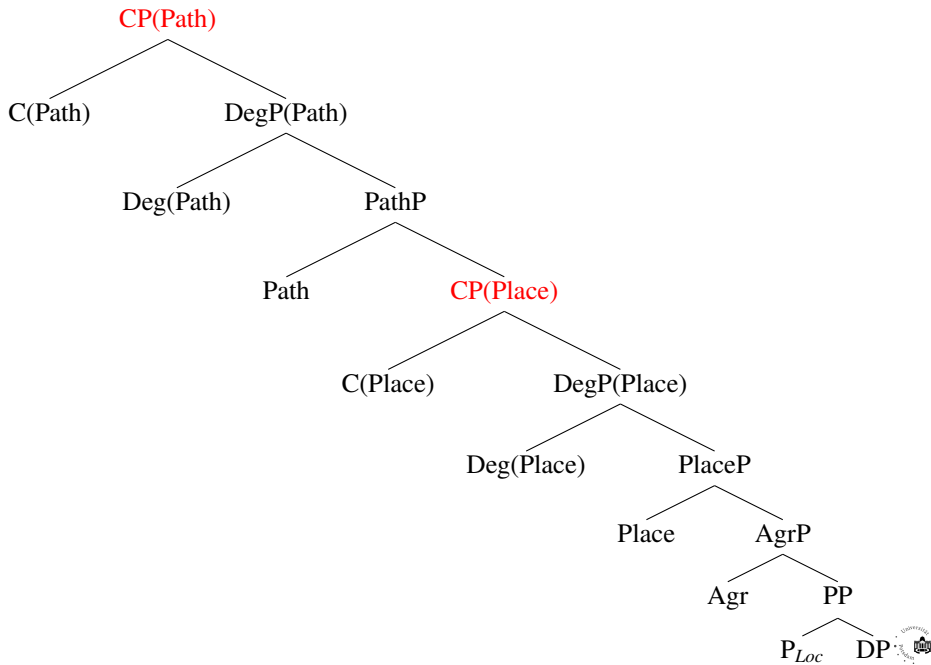
$CP \succ MoodP \succ NegP \succ TP \succ AspP \succ vP/VoiceP \succ V/\sqrt{ROOT}$
after Alexiadou et al. (2007:30)

(12) *sketch of the nominal projection:*

$DP \succ \#P \succ ClP \succ N/\sqrt{ROOT}$ after Borer (2005)

- PP structure similarly complex
- several proposals for extended projection of (locative) PPs, e.g. den Dikken (2006)





Analyses for attributive linkers

Predicate Inversion (den Dikken & Singhapreecha 2004)

- linker marks PI around subject
- key properties/indications for PI:
 - quantificational contexts (*wh*- or indefinite pronoun or focus)
 - marked information structure (contrastive reading, AP represents old information)

- (13) a. I consider John (to be) my best friend.
b. I consider my best friend *(to be) John.

- (14) French (den Dikken & Singhapreecha 2004:4, (5ac))

- a. Qui *(de) sérieux as-tu rencontré?
who DE serious have-you met
- b. Je n'ai mangé que DEUX pizzas ?(de) chaudes.
I not-have eaten but two pizzas DE hot

- (15) [chaude_i[de_{SC}[pizza][i]]]

(*ibid.*: 12, (21b))



Analyses for attributive linkers

Functional head

- a functional head mediates (needs to mediate) the relation between attribute and head noun (or coindexed variable)
- categorial identity of functional head:
 - new category Mod, marking pair-Merge → adjunction; includes adverbial modification (Rubin 2002)
 - extension of traditional C to include attributive linkers (Struckmeier 2007; von Prince 2008)

(16) *Mandarin Chinese:*

nǎi lǐ de dānbáizhǐ
milk in AL protein

“the protein (contained) in milk”

(von Prince 2008:7,(14))

(17) die sich_i treu-e Frau_i
the REFL.DAT true-KGN woman

“the woman who is true to herself”



Referential systems

	indices (events)	individuals
independent	$C_{main}/R1$	D/R3
restrictive	$C_{subord}/R2$	CGN,AL/R4

Figure: C-approach, making use of Struckmeier's (2007:169) R heads

	sentential	nominal
argument	C	D
modifier	Mod	

Figure: Mod-approach

Outline

① The phenomenon

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The syntactic role of -ko

-*ko* allows various kinds of phrases to appear adnominally
⇒ (important here:) licenses adnominal/attributive use of PPs in Basque

The syntactic role of -ko

Predicate Inversion (den Dikken & Singhapreecha 2004)

- key properties/indications for PI:
 - ✗ quantificational contexts
 - ✗ marked information structure (contrastive reading, AP represents old information)

Functional head

- ✓ closed lexical class, clitic, inseparable from complement, “second-order semantic contribution”, but: ✗ normally only one complement (Abney 1987)
- ✓ obligatory presence of linker, i.e. no information structurally “unmarked” version



The syntactic role of -ko

Hypothesis

- functional head closing off the extended projection of P
- resulting phrase adjoins to the NP that is to be modified
- agnostic regarding categorial identity: C or Mod
possibly more decisive dataset C_{compl} (*that, if*) vs. C_{adv} (*when* etc.)



Extended PP

Remember:

(18) den Dikken (2006)

$[_{\text{CP}(\text{Path})} \text{C}(\text{Path}) [_{\text{DegP}(\text{Path})} \text{Deg}(\text{Path}) [_{\text{PathP}} \text{Path} [_{\text{CP}(\text{Place})} \text{C}(\text{Place})$
 $[_{\text{DegP}(\text{Place})} \text{Deg}(\text{Place}) [_{\text{PlaceP}} \text{Place} [_{\text{AgrP}} \text{Agr} [_{\text{PP}} \text{P}_{\text{Loc}} \text{DP}]]]]]]]]$

Note

- den Dikken (2006) proposes C for reasons of movement facts in Dutch



Extended PP

Remember:

(19) den Dikken (2006)

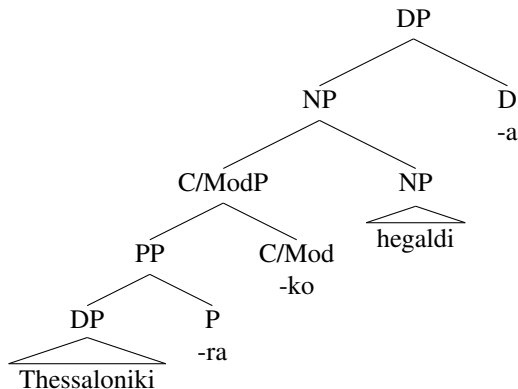
$[_{\text{DegP}(\text{Path})} \text{C}(\text{Path}) \text{C}(\text{Path})]_{\text{DegP}(\text{Path})} \text{Deg}(\text{Path}) [_{\text{PathP}} \text{Path} [_{\text{DegP}(\text{Place})} \text{C}(\text{Place}) \text{C}(\text{Place})]_{\text{DegP}(\text{Place})} \text{Deg}(\text{Place}) [_{\text{PlaceP}} \text{Place} [_{\text{AgrP}} \text{Agr} [_{\text{PP}} \text{P}_{\text{Loc}} \text{DP}]]]]]]$

Note

- den Dikken (2006) proposes C for reasons of movement facts in Dutch
- unclear (at this point), whether the very same head is involved



The flight to Thessaloniki



Semantic considerations

Question

What is the semantic contribution of (the head realized by) *-ko*?

Hypothesis

- ① restricts reference of a head noun (cf. Struckmeier's (2007) R4 heads)
- ② maps the semantic type of its complement onto a higher type

To illustrate, assuming the relevant PP complements are of type $\langle e, t \rangle$,

- A) the relevant head is an operator of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$
or, alternatively:
- B) ... of type $\langle \langle e, t \rangle, \langle \langle e, t \rangle, \langle e, t \rangle \rangle \rangle$



Type A semantics

$\langle \langle e, t \rangle, \langle e, t \rangle \rangle$

- identity function

$\text{FA}([_{\text{PP}, \langle e, t \rangle} \text{Thessaloniki-ra}], [_{\text{C}, \langle e, t \rangle} \text{-ko}])$

$\rightarrow [_{\text{CP}, \langle e, t \rangle} \text{Thessaloniki-ra-ko}]$

- Predicate Modification unifies the open variable of the modifier and the modifiee

$\text{PM}([_{\text{CP}, \langle e, t \rangle} \text{Thessaloniki-ra-ko}], [_{\text{NP}, \langle e, t \rangle} \text{hegaldi}])$

$\rightarrow [_{\text{NP}, \langle e, t \rangle} \text{Thessaloniki-ra-ko hegaldi}]$

$\lambda x. \text{flight}(x) \wedge \text{direction_towards}(x, t)$

\Rightarrow *-ko* possibly just flagging (triggering?) Predicate Modification



Type B semantics

$\langle \langle e,t \rangle, \langle \langle e,t \rangle, \langle e,t \rangle \rangle \rangle$

- FA yields higher type: $\langle et \rangle \rightarrow \langle et, et \rangle$
FA($[_{PP, \langle et \rangle}$ Thessaloniki-ra], $[_{C, \langle et, \langle et, et \rangle \rangle}$ -ko])
 \rightarrow $[_{CP, \langle et, et \rangle}$ Thessaloniki-ra-ko]
- Functional application cobinds the open variable of the modifier and the modifiee

FA($[_{CP, \langle et, et \rangle}$ Thessaloniki-ra-ko], $[_{NP, \langle et \rangle}$ hegaldi])
 \rightarrow $[_{NP, \langle et \rangle}$ Thessaloniki-ra-ko hegaldi]

$\lambda x. \text{flight}(x) \wedge \text{direction_towards}(x, t)$

\Rightarrow mapping to a higher semantic type

\Rightarrow allows us to get by with Functional Application only, no need for Predicate Modification (at least here)



Composition with the head noun

Type A ...by means of Predicate Modification

-*ko* as a flag for PM

Type B ...by means of Functional Application

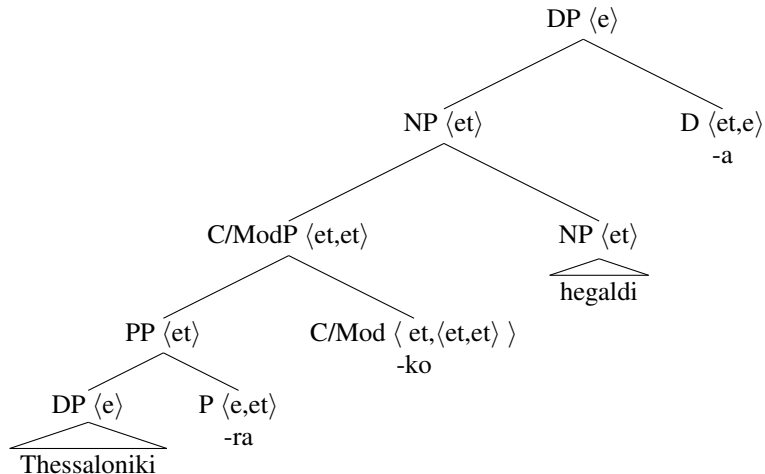
$\llbracket -ko \rrbracket \sim \lambda P \lambda Q \lambda x. P(x) \wedge Q(x)$, cf. Rubin (2002)

Proposal

Adopt a Type B analysis in order to simplify the semantic component.

The flight to Thessaloniki

type-driven semantics (Type B)



Type B explains obligatoriness

Question

Why is the presence of *-ko* obligatory with attributive PPs?

Answer

If there is no PM-operation available in the interpretational component, the absence of the *-ko*-operator leads to type incompatibility at LF:

(20) **FA**($[_{PP, \langle et \rangle}$ Thessaloniki-ra], $[_{NP, \langle et \rangle}$ hegaldi]) \rightarrow ???

-ko yields proper type \rightarrow composition by FA becomes possible:

(21) **FA**($[_{CP, \langle et, et \rangle}$ Thessaloniki-ra-ko], $[_{NP, \langle et \rangle}$ hegaldi])
 \rightarrow $[_{NP, \langle et \rangle}$ Thessaloniki-ra-ko hegaldi]

Conclusion

- Basque *-ko* is/realizes a functional head at the top of attributive PP
- phrase adjoins to NP
- allows semantic composition by means of FA only

Gains

- tacks in with proposed typology of functional heads
- simplification of semantic component (reduction to FA)

Costs

- adjectives in Basque do not combine with *-ko*
→ basically of type $\langle \text{et}, \text{et} \rangle$ with mapping to $\langle \text{et} \rangle$ in predicative uses?
cf. obligatoriness of *-a* for predicative adjectives



Open questions

- categorial identity: Mod or C?
- exact structural position of the operator (SplitCP á la Rizzi?)
- relation to other uses of *-ko* in Basque (“bare NP”, finite and non-finite clauses); further semantic contribution of *-ko* for non-predicative attributes (22) – or a matter of pragmatics?

(22) atzo-ko egunkaria
yesterday-KO newspaper.DET

“yesterday’s newspaper”

Hualde & Ortiz de Urbina (2003:144)



Some further questions

- relation to Basque relative clauses, headed by *-n*
- crosslinguistic relevance of structural differentiation of adverbial vs. adnominal PPs
 - ① in other languages with obligatory overt linking strategies for PP attribution, e.g. Amharic, Farsi...
 - ② in languages without ambiguously adverbial/adnominal PPs *viz.* in English, Greek, German... (empty heads, parametrization of semantic operations: PM vs. attributive linkers?)



Thanks a lot for your attention!
Eskerrik asko!



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Outline

④ Relation between different instances of -ko



- (23) a. bihotz on
heart good
- b. bihotz on-eko neska bat
heart good-AL girl INDEF
“a good hearted girl”

with an adverbial participle in *-ta* or *-(r)ik*

- (24) a. *erosi-ta*
buy-PART
“having (been) bought”
- b. *atzo ni-k erosi-ta-ko luburu-a*
yesterday 1SG-ERG buy-PART-KO book-DET
“the book I bought yesterday”

with (mostly temporal) finite adverbial clause

- (25) a. izarr-a agertu zitzaiene-an
star-DET appear AUX.(COMP_{en})-LOC
“when the star appeared to them”
- b. izarra agertu zitzaiene-ko garai-an
AUX.(COMP_{en})-KO time-LOC
“at the time when the star appeared to them”

with finite complement clause

- only before certain head nouns meaning “story, report, rumor” etc.

- (26) a. hil dute-la
kill AUX-COMP_{la}
“that he has been killed”
- b. hil dute-la-ko kontun-a
AUX-COMP_{la}-AL report-DET
“the report that he has been killed”



- *-ko* realizes a head (a class of heads) restricting reference to individuals (i.e. Struckmeier's R_4)
- *-ko* does not take [finite] complements

[-finite]	[+case]	[-case]
EPP	participles	?
no EPP	bare NP	AdvP, PP; CP

Figure: Instances of *-ko*

R ₄	[+case]	[-case]
[+ finite]	∅	-an
[- finite]	-ko	-ko

Figure: Relation of -ko to the relative marker - finiteness and case

R ₄	EPP	no EPP
[+ finite]	-an	∅
[- finite]	-ko	-ko

Figure: Relation of -ko to the relative marker - finiteness and EPP