

# 1 The phenomenon

## “Relational” -ko in Basque

- used in adnominals (i.e. for attribution)
- to the right of its complement
- wide range of applications, cf. following examples from Hualde & de Urbina (2003:144-148)

### with lexical adverb

- (1) atzo-ko egunkaria  
yesterday-KO newspaper.DET  
“yesterday’s newspaper”
- (2) hemen-go giro-a  
here-KO atmosphere-DET  
“the atmosphere here”

### with adverb made by *-la(n)*

- (3) a. ze-la  
INTERROG-ADV<sub>la</sub>
- b. zela-ko pertsona?  
how-KO person.DET  
“what kind of person?”

### with morphologically complex adverb

- (4) hitz-ez hitz *literally, word for word*
- a. hitz-ez hitz-e-ko itzulpen-a  
word-INST.PL word-LINK-KO translation-DET  
“a word-for-word translation”

### with a PP

- (5) lotsa gabe *without shame*
- a. lotsa-gabe-ko emakume bat  
shame-without-KO woman INDEF  
“a shameless woman”
- (6) gerra ondoan *after the war*
- a. gerra-ondo-ko mundu-a  
war-after-KO world-DET  
“the post-war world”

### with NP marked for any local case

- (7) mendi-etan *in the mountains*
- a. mendi-eta-ko haitzulo-a-k  
mountain-LOC.PL-KO cave-DET-PL  
“the caves in the mountains”
- (8) ordu-an *then, at that time*
- a. ordu-∅-ko ahitur-a-k  
time-LOC.SG-KO custom-DET-PL  
“the customs of that time”
- (9) Bilbo-ra *to Bilbao*
- a. Bilbo-ra-ko bide-a  
Bilbao-ALL-KO road-DET  
“the road to Bilbao”

### with NP marked for comitative case

- (10) gu-rekin *with us*
- a. gu-reki-ko ume-a-k  
1PL-COM-KO child-DET-PL  
“the children (who are/were) with us”

### with NP marked for instrumental case

- (11) euskara-z-ko hitzaldi-a  
Basque-INST-KO lecture-DET  
“a lecture (given) in Basque”

**with an adverb constructed from NP by *-ka***

- *-ka* forms adverbs from nominals (cf. Trask 2008:245)

(12) esku-hus-ka-ko     pilota partida  
 hand-bare-ADV-KO pilota game.DET  
 “a game of bare-handed pilota”

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

- the only way in western varieties for adjectival participles to take arguments and adjuncts

(13) a. erosi-ta  
 buy-PTC  
 “having (been) bought”  
 b. atzo     ni-k     erosi-ta-ko     liburu-a  
 yesterday 1SG-ERG buy-PTC-KO book-DET  
 “the book I bought yesterday”

(14) a. ekarri-rik  
 bring-PTC  
 “having (been) brought”  
 b. txori-a-k     kabi-ra-∅     ekarri-ri-ko     abarr-a  
 bird-DET.SG-ERG nest-ALL-ABS bring-PTC-KO branch-DET.SG  
 “the branch brought to the nest by the bird”

**with (mostly temporal) finite adverbial clause**

(15) a. izarr-a     agertu zitzaiene-an  
 star-DET appear AUX.(COMP<sub>en</sub>)-LOC  
 “when the star appeared to them”  
 b. izarra agertu zitzaiene-ko     garai-an  
 AUX.(COMP<sub>en</sub>)-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.

(16) a. hil dute-la  
 kill AUX-COMP<sub>ta</sub>  
 “that he has been killed”  
 b. hil dute-la-ko     kontun-a  
 AUX-COMP<sub>ta</sub>-KO report-DET  
 “the report that he has been killed”

***-ko* and adverbials**

- any adverbial constituent can be used adnominally in phrase headed by *-ko*
- only exception: adverbs of manner derived from adjectives with *-ki*:
  - *gaitz* “bad”
  - *gaitz-ki* “badly”
  - \**gaitz-ki-ko*

**bare NP**

- Hualde & de Urbina (2003:147f.) present association with bare NPs as a distinct possibility
- no adverbial complement
- at least two words
- must express quality/characteristic
- “obscure semantic restrictions”

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

<i>hortz bi</i>	'two teeth'	<i>hortz biko sardea</i>	'a two-pronged pitchfork'	(18)	<i>vi-faa<sub>i</sub></i>	<i>vy-a</i>	<i>—<sub>i</sub></i>	<i>ku-tosha</i>	<i>vy-a</i>	<i>PRO<sub>i/*i</sub></i>	<i>ku-fany(i)a</i>	<i>—<sub>i</sub></i>
<i>bihotz on</i>	'good heart'	<i>bihotz oneko neska bat</i>	'a good hearted girl'		equipment(8)	8-AL		INF-be.enough	8-AL	PRO	INF-do⟨APP⟩	
<i>hiru urte</i>	'three years'	<i>hiru urteko ume bat</i>	'a three-year-old child'		<i>utafiti</i>	<i>w-a</i>	<i>kisayansi</i>					
<i>beso eder</i>	'beautiful arm'	<i>beso ederreko pilotaria</i>	'a jai-alai-player with a great arm'		research(11)	11-AL	science					

“sufficient equipment to do scientific research” von Prince (2007:51f.; 54)

Figure 1: -ko phrases with non-adverbial base (Hualde & de Urbina 2003:148, Table 51)

Complements to -ko

- adverb {
  - lexical adverbs
  - adverbs made by suffix *-la(n)*
  - morphologically complex adverbs
  - adverbs constructed from NPs by *-ka*
- PP(cf. Eguzkitza 1993) {
  - NPs marked for any local case
  - NPs marked for comitative case
  - NPs marked for instrumental case
  - “classical” PPs
- infinite clause {
  - adverbial participles with *-ta/(r)ik*
- finite clause {
  - finite adverbial clauses
  - finite complement clauses
- bare NP

von Prince’s analysis

(19) [<sub>NP</sub> *vi-faa<sub>i</sub>* [<sub>CP<sub>1</sub></sub> *op<sub>i</sub>* *vy-a* [<sub>TP</sub> *—<sub>i</sub>* *ku-tosha*]] [<sub>CP<sub>2</sub></sub> *op<sub>i</sub>* *vy-a* [<sub>TP</sub> *PRO<sub>j/\*i</sub>* *ku-fany(i)a* *—<sub>i</sub>* *utafiti* *w-a* *kisayansi*]] ] ]  
 equipment(8) *op* 8-AL INF-be.enough *op* 8-AL  
 PRO INF-do⟨APP⟩ research(11) 11-AL science  
 “sufficient equipment to do scientific research” adapted from von Prince (2007:51f.; 54)

- CP<sub>1</sub> involves infinite complement and subject *op* → feature set on AL: [-finite, + case] (and [*uQ\**])
- CP<sub>2</sub> involves infinite complement and subject PRO, *op* is argument to applicative head → feature set on AL: [-finite, - case] (and [*uQ\**])

2 Theoretical Approaches to Attribution

- classically analyzed as “locative genitive” case ending
- Eguzkitza (1993) treats *-ko*-Phrases as derived PP adjuncts to  $\bar{N}$
- de Rijk (1993:149) views them as “linking to a following NP any syntactic phrase enjoying PP status, including even complementizer-bearing clauses”

2.1 von Prince 2007

- von Prince (2007) treats attributive linkers in Mandarin Chinese, Hindi and Swahili
- analyzes them as C-heads, differentiating between Complementizer and ALs with different sets of features

von Prince’s typology of C-heads

- (20) *that* [+finite, -case] (von Prince 2007:60, (114ab))  
 a. I don’t like [<sub>NP</sub> the fact [<sub>CP</sub> *that*<sub>AL</sub> she’s always late]].  
 b. My parents liked [<sub>NP</sub> the book [<sub>CP</sub> *that*<sub>AL</sub> I gave them]]
- (21) *of* [-finite, +case] (von Prince 2007:62, (117ab))  
 a. the house of my parents  
 b. the idea of him getting married
- (22) *of* [-finite, -case] (von Prince 2007:62, (117c))  
 a. his plans of getting married

		[+finite, -case]	[-finite, +case]	[-finite, -case]
Chinese	AL	<i>de</i>	<i>de</i>	<i>de</i>
	Comp	∅	-	∅
Swahili	AL	<i>amba-</i>	<i>-a</i>	<i>-a</i>
	Comp	<i>kwamba</i>	-	∅
Hindi	AL	∅?	<i>ka</i>	<i>ka</i>
	Comp	<i>ki</i>	-	-
English	AL	<i>that/∅</i>	<i>of</i>	<i>of</i>
	Comp	<i>that</i>	<i>for</i>	∅

**infinite categories**

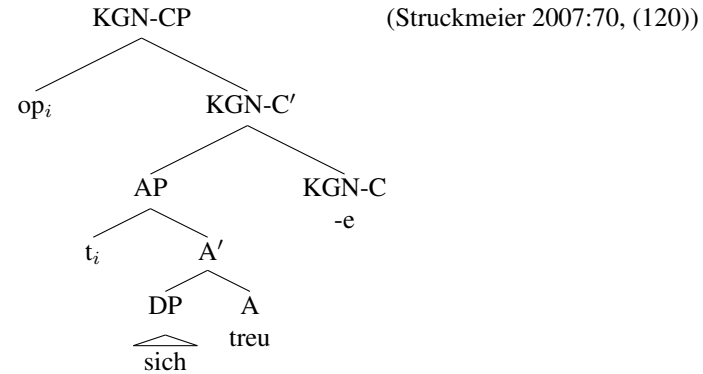
- for non-T complements von Prince suggests some feature [infinite]

	NP	Adv	PP	NUM
Chinese	+	+	+	-
Swahili	+	+	-	+
Hindi	+	+	-	-

**Figure 2:** Distribution of the [infinite] feature after von Prince (2007:58, Table 4)

**2.2 Struckmeier 2007**

- Struckmeier (2007) proposes that attribution in German is effected by the *case-gender-number-suffixes* (KGN)
- analysed as C heads



**two key differences to von Prince**

**movement to Spec** triggered by EPP feature on a probe (instead of uQ\*), *Maximize Merging Effects* demands that *Agree* operate on maximum set of features - KGN is a probe, *op* the appropriate goal

**case assignment** KGN does not license case on *op*, gets case from the same probe as head noun by defective feature agreement

- *op* lacks a person feature just as participles under discussion → no uninterpretable features left inside → case valuing probe is not discharged (allowing full agreement with head noun)

**Struckmeier's typology of C/R-heads**

	<u>Reference to indices</u>	<u>Reference to individuals</u>
<u>Independent</u>	R1: R <sup>0</sup> = V <sub>fin</sub>	R3: R <sup>0</sup> = Det
<u>Restrictive</u>	R2: R <sup>0</sup> = Compl	R4: R <sup>0</sup> = CGN

**Figure 3:** Struckmeier's (2007:169) R heads

**3 -ko as attributive linker**

- *-ko* modifies nouns → qualifies as R<sub>4</sub> in Struckmeier's terms

	<u>Reference to indices</u>	<u>Reference to individuals</u>
<u>Independent</u>	EPP, finite selection	EPP, finite selection
	EPP, infinite selection	EPP, infinite selection
	no EPP, finite selection	no EPP, finite selection
	no EPP, infinite selection	no EPP, infinite selection
<u>Restrictive</u>	EPP, finite selection	EPP, finite selection
	EPP, infinite selection	EPP, infinite selection
	no EPP, finite selection	no EPP, finite selection
	no EPP, infinite selection	no EPP, infinite selection

(translated from Struckmeier 2007:103, (167))

- but note that his term of “restrictive reference” may be problematic

How does *-ko* figure in the context of von Prince’s and Struckmeier’s theories?

### Participles

(23) [op<sub>i</sub> [atzo ni-k ⟨op<sub>i</sub>⟩ erosi-ta ]<sub>TP</sub> -ko ]<sub>R<sub>4</sub>P/CP</sub> liburu-a<sub>i</sub>  
*op* yesterday 1SG-ERG buy-PTC R<sub>4</sub> book-DET  
 “the book I bought yesterday”

- difference from “typical” (e.g. German or English) participles: abstraction not necessarily of highest argument

(24) atzo ikusi-ta-ko gizon-ak  
 yesterday see-PTCP-KO man-DET.ABS.PL  
 “the men who saw X yesterday / who X saw yesterday”

- a. [ op<sub>i</sub> [ atzo *pro*<sub>ERG</sub> ⟨op<sub>i</sub>⟩ ikusi-ta ]<sub>TP</sub> -ko ]<sub>R<sub>4</sub></sub> gizon-ak *object gap*  
 b. [ op<sub>i</sub> [ atzo ⟨op<sub>i</sub>⟩ *pro*<sub>ABS</sub> ikusi-ta ]<sub>TP</sub> -ko ]<sub>R<sub>4</sub></sub> gizon-ak *subject gap*

(25) a. atzo ni-k ikusi-ta-ko gizon-ak  
 yesterday I-ERG see-PTCP-KO man-DET.ABS.PL  
 “the men I saw yesterday”

- b. atzo ni ikusi-ta-ko gizon-ak  
 yesterday I[ABS] see-PTCP-KO man-DET.ABS.PL  
 “the men who saw me yesterday”

(25a) atzo ni-k ikusi-ta-ko gizon-ak  
 yesterday I-ERG see-PTCP-KO man-DET.ABS.PL  
 “the men I saw yesterday”

- supports von Prince’s proposal about case assignment
- supposedly infinite T cannot license subject case
- if licenser for subject and head noun were the same as in Struckmeier’s model, they should presumably bear the same case, but cf. (25a)
- hence [-finite, +case, EPP]
- ... but note the possibility of significant difference between ergative and nominative assignment

### adverbials, plain NP

- infinite along the lines of von Prince’s [infinite] feature (cf. table 2)
- AdvP and PP may not agree with a case feature: *-ko* with [-finite, -case]
- NP needs a valued case feature *-ko* with [-finite, +case]

### What about EPP?

- simple predication via *op* of some internal argument to head noun seems implausible, hence no need for an EPP feature
- cf. e.g. *bihotz oneko neska bat* “a good hearted girl” → PRED(good heart, girl)
- discussing the predicativity of ALs von Prince (2007:30, (69)) tentatively suggests a more complex semantics for Mandarin AL *de*

(26) [[de]=λPλQλx [ P(x) ∧ Q(y) ∧ y belongs to/is characterized by/associated with x]

**finite clauses**

(15) izarr-a agertu zitzaiene-ko garai-an  
 star-DET appear AUX.(COMP<sub>en</sub>)-KO time-LOC  
 “at the time when the star appeared to them”

(16) hil dute-la-ko kontun-a  
 kill AUX-COMP<sub>la</sub>-KO report-DET  
 “the report that he has been killed”

- no element corefers with head noun
- hence no reason to assume *op*
- hence no motivation for [EPP] or [+case]
- the complement of the COMP (phase) head is inaccessible for *Agree* → finite T is not visible for *-ko*
- *-ko* does not select [+finite] here
- Eguzkitza (1993:180, fn. 20) suggests that *-la* heads a PP
- would be infinite (cf. above)
- but P to select finite T?

one hypothesis might be: [-finite, -case]

**4 Conclusion**

- *-ko* realizes a head (a class of heads) restricting reference to individuals (i.e. Struckmeier’s R<sub>4</sub>)
- *-ko* does not take [finite] complements

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

**Figure 4:** Instances of -ko

R <sub>4</sub>	[+case]	[-case]	R <sub>4</sub>	EPP	no EPP
[+ finite]	∅	-an	[+ finite]	-an	∅
[- finite]	-ko	-ko	[- finite]	-ko	-ko

**Figure 5:** Relation of -ko to the relative marker - finiteness and case

**Figure 6:** Relation of -ko to the relative marker - finiteness and EPP

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