

# Spell-out domains

## Contextually conditioned allomorphy in the Basque nominal domain

Georg F.K. Höhn  
gfk3@cam.ac.uk



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# Topic of the talk

The extended nominal projection ( $xnP$ ) in Basque and its spell-out

## Analytic goal

Unification of two apparently distinct anomalies:

- apparently distinct basic and locative case paradigms in Basque
- no co-occurrence of the adnominal linker *-ko* with the definite singular locative (in contrast to other adverbial cases)

## Hypotheses

- 1 Grammatical and adverbial case suffixes in Basque realize different heads in the  $xnP$ .
- 2 Interactions in spell-out of locative and the definite article.
- 3 The relevant locality conditions conform to Embick's (2010)  $\mathbb{C}_1$ -LIN-theory.

# Outline

- 1 The locative anomalies
- 2 Deconstructing the paradigms
- 3 The extended nominal projection
- 4 Generalizations
- 5 A localist implementation
- 6 Notational variants?
- 7 Conclusion

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# The paradigmatic view

- de Rijk (2008) splits Basque case system into basic and locative system
- differences of locative case system from basic one
  - lacks the determiner *-a*
  - has additional “number markers” *-eta/-ta* for definite plural and indefinite forms
  - is incompatible with animate nouns: \**mutil(e)an*, instead a sort of proxy is needed to bear marking: *-gan* or *baita*

**Table:** Paradigm for *leku* ‘place’ (adapted from Hualde & Ortiz de Urbina 2003:173) above “basic” case system, below locative one

	INDEFINITE	DEF.SG	DEF.PL
ABSOLUTIVE	leku	leku <b>a</b>	lekuak
ERGATIVE	lekuk	leku <b>ak</b>	lekuek
DATIVE	lekuri	leku <b>ari</b>	lekuei
GENITIVE	lekuren	leku <b>aren</b>	lekuen
BENEFACTIVE	lekurentzat	leku <b>arentzat</b>	lekuentzat
COMITATIVE	lekurekin	leku <b>arekin</b>	lekuekin
INSTRUMENTAL	lekuz	leku <b>az</b>	lekuez
LOCATIVE	leku <b>tan</b>	lekuan	leku <b>etan</b>
ABLATIVE	leku <b>tatik</b>	lekutik	leku <b>etatik</b>
ALLATIVE	leku <b>tara</b>	lekura	leku <b>etara</b>
DIRECTIONAL	leku <b>tarantz</b>	lekurantz	leku <b>etarantz</b>
TERMINATIVE	leku <b>taraino</b>	lekuraino	leku <b>etaraino</b>

**Table:** Local paradigm for *mutil* ‘boy’ (Hualde & Ortiz de Urbina 2003:176)

	INDEFINITE	DEF.SG	DEF.PL
LOC	mutilengan	mutila(ren)gan	mutilengan
ABL	mutilengandik	mutila(ren)gandik	mutilengandik
ALL	mutilengana	mutila(ren)gana	mutilengana
DIR	mutileganantz	mutila(ren)ganantz	mutilenganantz
TERM	mutilenganaino	mutila(ren)ganaino	mutilenganaino

alternatively: *mutilen/mutila(ren) baitan, baitatik, baitara...*

## The adnominal linker -ko

- not a case marker (de Rijk 2008)
- connects, among others, PPs and “adverbial cases” to nouns (Höhn 2012)
- definite singular locative incompatible with linker, (2-a) vs. (2-b)

- (1) a. mutil-a-ren-tza-ko                      opari-a  
 boy-DET.SG-GEN-BEN-KO present-DET  
 ‘the present for the boy’
- b. lantegi-eta-ko                      tximini-a-k  
 factory-LOC.PL-KO chimney-DET-PL  
 ‘the chimneys in the factories’
- (2) a. lantegi-∅-ko tximini-a-k  
 ‘the chimneys in the factory’
- b. \*lantegi-an-(k/g)o                      tximini-a-k  
 factory-LOC.DEF.SG-KO chimney-DET-PL



## Resulting view

- the behaviour of the “locative cases” is idiosyncratic (historically older part of the case system)
- linker-locative anomaly treated independently (e.g. postposition deletion: de Rijk (1993, 2008))

### Questions for a paradigmatic approach

- ① locative anomalies in two independent contexts coincidental?
- ② *ta/eta* markers
  - if number marker, why on indefinites rather than on singulars?
  - if *-ta* marks indefinites: why definite plural locative *-eta(n)*?
- ③ restriction of this number/indefiniteness marking to locative system – inherent connection of number and locative??

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# Revisiting the paradigm(s)

**Table:** Forms of *leku* ‘place’ (adapted from Hualde & Ortiz de Urbina 2003:173)  
definiteness marked

	INDEFINITE	DEF.SG	DEF.PL	DEF.PROX.PL
ABS	leku	leku <b>a</b>	leku <b>a</b> k	leku <b>o</b> k
ERG	lekuk	leku <b>a</b> k	leku <b>e</b> k	leku <b>o</b> k
DAT	lekuri	leku <b>a</b> ri	leku <b>e</b> i	leku <b>o</b> i
GEN	lekuren	leku <b>a</b> ren	leku <b>e</b> n	leku <b>o</b> n
BEN	lekurentzat	leku <b>a</b> rentzat	leku <b>e</b> ntzat	leku <b>o</b> ntzat
COM	lekurekin	leku <b>a</b> rekin	leku <b>e</b> kin	leku <b>o</b> kin
INST	lekuz	leku <b>a</b> z	leku <b>e</b> z	leku <b>o</b> z
LOC	lekutan	lekuan	leku <b>e</b> tan	leku <b>o</b> tan
ABL	lekutatik	lekutik	leku <b>e</b> tatik	leku <b>o</b> tatik
ALL	lekutara	lekura	leku <b>e</b> tara	leku <b>o</b> tara
DIR	lekutarantz	lekurantz	leku <b>e</b> tarantz	leku <b>o</b> tarantz

## Revisiting the paradigm(s)

- in the definite plural the marker *-e* is present throughout (modulo absolutive)
- another form of definite plural, “proximal”, has *-o* instead of *-e*
- that leaves the same morpheme *-ta* in both indefinite and plural locatives

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INST	lekuz	leku <b>a</b> z	leku <b>e</b> z	leku <b>o</b> z
LOC	lekut <b>a</b> n	lekuan	leku <b>e</b> tan	leku <b>o</b> tan
ABL	lekut <b>a</b> tik	lekutik	leku <b>e</b> tatik	leku <b>o</b> tatik
ALL	lekut <b>a</b> ra	lekura	leku <b>e</b> tara	leku <b>o</b> tara
DIR	lekut <b>a</b> rantz	lekurantz	leku <b>e</b> tarantz	leku <b>o</b> tarantz

## A different contrast

- distinguish grammatical cases from adverbial “cases” (Eguzkitza 1993)
  - only grammatical cases marked on auxiliary
  - no complementary distribution of grammatical and adverbial cases:
    - ama-ren-tzat* ‘for the mother’ genitive + benefactive
  - only adverbial cases appear with linker *-ko*
- directionals consist of stative/locative and dynamic/directional part (Cinque & Rizzi 2010)
- *-ta(n)* is default locative marker
- singular allomorph *-an* (definite article absent)

## A different contrast

**Table:** *leku* ‘place’; above grammatical cases, below postpositions; marked def.sg. and locative morpheme

	INDEFINITE	DEF.SG	DEF.PL
ABSOLUTIVE	leku	leku <sup>a</sup>	lekuak
ERGATIVE	lekuk	leku <sup>a</sup> k	lekuek
DATIVE	lekuri	leku <sup>a</sup> ri	lekuei
GENITIVE	lekuren	leku <sup>a</sup> ren	lekuen
BENEFACTIVE	lekurentzat	leku <sup>a</sup> rentzat	lekuentzat
COMITATIVE	lekurekin	leku <sup>a</sup> rekin	lekuekin
INSTRUMENTAL	lekuz	leku <sup>a</sup> z	lekuez
LOCATIVE	leku <sup>a</sup> tan	leku <sup>a</sup> n	lekuetan
ABLATIVE	leku <sup>a</sup> tatik	lekutik	lekuet <sup>a</sup> tatik
ALLATIVE	leku <sup>a</sup> tara	lekura	lekuet <sup>a</sup> tara
DIRECTIONAL	leku <sup>a</sup> rantz	lekurantz	lekuet <sup>a</sup> rantz
TERMINATIVE	leku <sup>a</sup> raino	lekuraino	lekuet <sup>a</sup> raino

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# Framework

- Distributed Morphology (Halle & Marantz 1993):
  - syntactic structure all the way down
  - underspecification of vocabulary items
  - late insertion
- category neutral  $\sqrt{\text{ROOTS}}$
- categorial properties through categorial heads  $n, v, a$  (e.g. Marantz 1997; Embick 2010)
- extended nominal projection ( $xnP$ ) headed by categorial head  $n$
- leaving open the question of how wordhood is related to structure

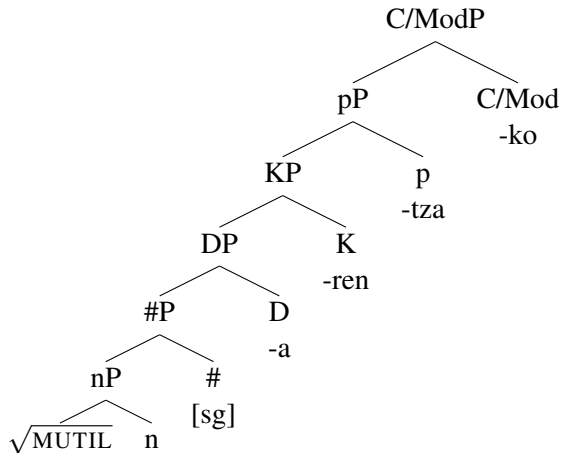
# Assumptions

- Basque is right-headed
- linker *-ko* is highest functional head in *xnP*, C/Mod; generally selects PPs
- adverbial “case” endings are postpositions and realize a functional head *p*
- grammatical cases realize a K(ase) head
- absolutive case is marked by absence of K (Arregi & Nevins 2012:ch. 2)
- number (#) head below D (Artiagoitia 2002)
- at spell-out, D fuses with # yielding definite singular *-a* and plural *-e*

# A sample xnP

Benefactive singular

*mutilarentzako(-a)* ‘(the one) for the boy’



## Specific assumptions regarding locative

- locative head is structurally present when interpreted at LF
- directional adpositions ( $p_{\text{dir}}$ ) select a locative projection ( $p_{\text{loc}}\text{P}$ ), cf. Cinque & Rizzi (2010)
- *-gan* blocks the [animate] feature of its complement, possibly by starting a new  $x\text{nP}$

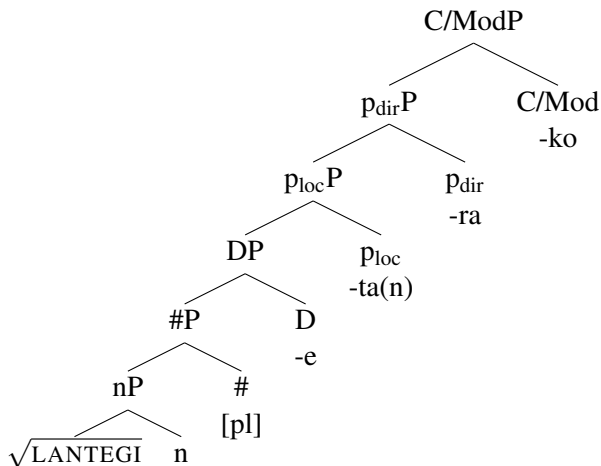
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# Allative plural

- K is absent (absolutive)
- spatial postpositions split in  $p_{loc}$  and  $p_{dir}$

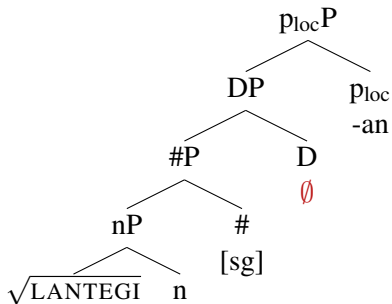
*lantegietarako (bidea)* ‘(the road) towards the factories’



# Locative singular

- zero spell-out of D

*lantegian* ‘in the factory’

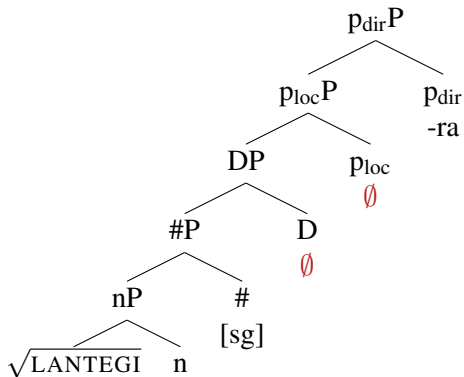


# Allative singular

## Anomaly 1

- zero spell-out of D and  $p_{loc}$

*lantegira* ‘towards the factory’



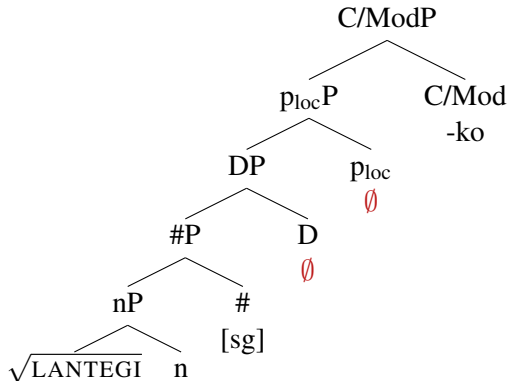


# Locative singular with linker

## Anomaly 2

- as in allative singular: zero spell-out of D and  $p_{loc}$

*lantegiko (tximiniak)* ‘(the chimneys) in the factory’



## Generalizations on spell-out conditions

- 1 In the presence of  $p_{loc}$ , the singular determiner is silent.
- 2 Basque  $p_{loc}$  is overtly realized iff a) its complement does not have a singular feature or b) it is the highest head in the extended nominal projection.

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## Embick's (2010) $\mathbb{C}_1$ -LIN theory

- categorial nodes and phase heads are cyclic nodes
- conditions on formation of phonological/PF cycles:
  - merging a cyclic head  $x$  triggers spell-out of cyclic domains in its domain
  - spell-out of a cyclic domain means Vocabulary Insertion for a cyclic head  $y$ , its complement and its edge<sup>+</sup> material (i.e. higher non-cyclic heads up to the next cyclic head)
  - the complement of cyclic head  $x$  is not present when the next higher cyclic head is spelled out
- only linearly adjacent heads within the same PF cycle trigger allomorphy
- heads with zero spell-out are pruned, i.e. don't count for adjacency

# Analysis

- K but not D is a cyclic head
- p heads are not cyclic heads
- remember that K is absent in the absolutive  
 ⇒ for locatives the complete  $xnP$  is present in one phonological cycle
- assume following Vocabulary Items

- (3)  $\# + D[\text{def}, \text{pl}] \leftrightarrow -\text{ak} / \_\_\_\text{PF domain}$   
 $\# + D[\text{def}, \text{pl}] \leftrightarrow -\text{e}$   
 $\# + D[\text{def}, \text{sg}] \leftrightarrow -\emptyset / \_\_\_\text{[loc]}$   
 $\# + D[\text{def}, \text{sg}] \leftrightarrow -\text{a}$
- (4)  $p_{\text{loc}} \leftrightarrow -\text{an} / [\text{sg}] \_\_\_\text{PF domain}$   
 $p_{\text{loc}} \leftrightarrow \emptyset / [\text{sg}] \_\_\_\text{PF domain}$   
 $p_{\text{loc}} \leftrightarrow -\text{tan}$

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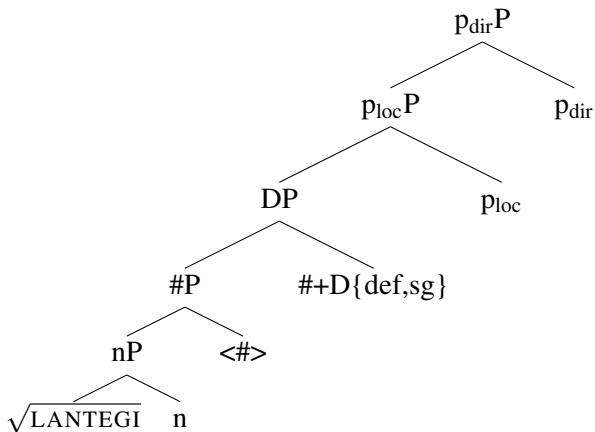
$p_{\text{loc}} \leftrightarrow \emptyset / [\text{sg}] \text{loc}$

$p_{\text{loc}} \leftrightarrow -\text{tan}$

# Example spell-out

*lantegira* ‘towards the factory’

(5)



## Example spell-out

*lantegira* ‘towards the factory’

- n is sole cyclic head
- crucially, nothing intervenes between #+D and  $p_{loc}$
- hence insertion in same PF cycle

$$(5) \quad [ [ [ [ [ \sqrt{\text{LANTEGI}} \text{ n} ]_{nP} \langle \# \rangle ]_{\#P} \# + D \{ \text{def, sg} \} ]_{DP} p_{loc} ]_{p_{loc}P} p_{dir} ]_{p_{dir}P}$$

(6) *Fusion of # and D and linearization:*

$$\sqrt{\text{LANTEGI}} \frown (n) \frown (\# + D[\text{def, sg}]) \frown (p[\text{loc}]) \frown (p[\text{all}])$$

*Vocabulary Insertion:*

$$\sqrt{\text{LANTEGI}} \frown (n, \emptyset) \frown (\# + D[\text{def, sg}], \emptyset) \frown (p[\text{loc}], \emptyset) \frown (p[\text{all}], -ra)$$

*pruning:*  $\sqrt{\text{LANTEGI}} \frown (p[\text{all}], -ra)$

*spell-out:* lantegira



# Domain size

## Prediction

Spell-out interaction between D and a p is impossible if K intervenes.

- Zero spell-out of D cannot apply.

(7) emakume-\*(a)-ren-tza-ko      opari-a  
 woman-DET.SG-GEN-BEN-KO present-DET.SG  
 ‘the present for the woman’

(8) mutil-\*(a)-re-ki-ko      maitasun-a  
 boy-DET.SG-GEN-COM-KO love-DET.SG  
 ‘the love for/towards the boy’

# Domain size

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animate locatives may present a more direct test case:

- D and locative marking not adjacent, separated by K

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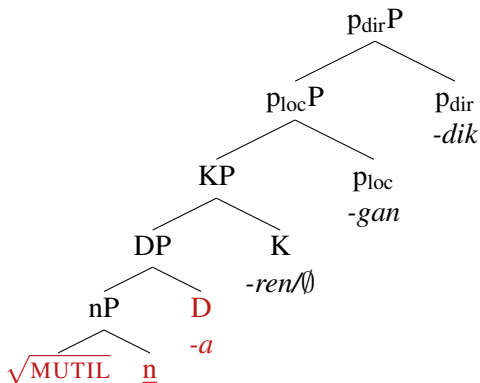
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animate locatives may present a more direct test case:

- D and locative marking not adjacent, separated by K
- genitive marking may be optionally dropped → adjacency
- still in separate PF cycles
- the zero exponent of D (or  $p_{loc}$ ) is not inserted!

- (7) \***mutil- $\emptyset$** ]<sub>PF- $\emptyset$</sub> -gan-dik  
 boy-DET.SG-GEN-LOC?-ABL  
 ‘from the boy’

(8)



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- ② “Context-Sensitive Spell-Out” (Ackema & Neeleman 2003, 2012)
  - context: prosodic phrase
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  - could introduce non-adjacent interactions within context domain
  - seems too powerful for present case (cf. animate locative)
- ③  $C_1$ -LIN type locality, deletion/impoverishment instead of zero spell-out
  - yes, possibly

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## Results

- “case paradigms” of Basque derived from variable structure of  $xnP$
- locative anomalies traced to interaction of  $xnP$  with spell-out properties of  $D$  and  $p_{loc}$
- size of phonological cycle restrict possible range of such phenomena (if Embick’s (2010)  $C_1$ -LIN theory is on the right track)

## Open issues

- relation to other apparent cases of “postposition deletion” ( $C_1$ -LIN too restrictive?)
- detailed analysis of animacy blocking “proxy” morphemes (*-gan*, *baita*)
- relation structure-(phonological) word

Thanks a lot for your attention!  
*Eskerrik asko!*

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## “Postposition deletion”

Maybe “postposition deletion” (as in de Rijk 1993, 2008) before the linker occurs with other adverbial cases as well:

(9) comitative

a. bihotz on-eko emakume-a  
heart good-KO woman-DET.SG  
‘the good-hearted woman’

b. \*bihotz on-a-re-ki-ko emakumea  
heart good-DET.SG-GEN-COM-KO woman-DET.SG

However, it is not a general, obligatory procedure (if it is one at all):

(10) emakume-re-ki-ko diskriminazio-a  
woman-GEN.INDEF-COM-KO discrimination-DET.SG  
‘discrimination against women’

⇒ anomaly of the locative probably still “special”

## P-drop in Greek

- (11) a. *Imun (s-to) gimnastirio otan egine o*  
*was.1SG in-DET.ACC.SG.N gym when occurred the*  
*sismos.*  
*earthquake*  
*‘I was at the gym when the earthquake occurred.’* (Terzi  
2010:175, (17a))
- b. *Pao (s-ta) Giannitsa.*  
*go.1SG to-DET.ACC.PL.N Giannitsa*  
*‘I’m going to Giannitsa.’*

- accounts in terms of lack of case assignment by  $P_0$  (Ioannidou & den Dikken 2006), realization of PLACE (Terzi 2010), phrasal spell-out (Caha 2011)
- restricted to specific classes of nouns – Basque locative anomalies are not
- generally optional (register?) – not the case in Basque

## /n/ at morpheme boundaries

- final /n/ in functional morphemes seems to be deleted if the following functional morpheme begins with /k/, cf. genitive *-re(n)*, comitative *-ki(n)* and locative *-ta(n)*
- in lexical morphemes: voice assimilation of velar instead
- nevertheless simple /-n/ deletion cannot account for *leku-ko* ‘in the place’ still ungrammatical with simple /a/ (remainder of *-an*): \**leku-a-ko*

- (12)
- a. mutil-a-re-ki-ko                      maitasun-a  
boy-DET-GEN-COM-KO love-DET  
‘the love for the boy’
  - b. mutil-a-re(\*n)-ki(\*n)-ko
  - c. *mendietan* ‘in the mountains’ vs. *mendieta-ko-a* ‘the one in the mountains’
  - d. *Berlin-go*

# Locative singular *-an*

## Options

- 1 determiner absent/silent + locative allomorph *-an*
  - 2 determiner *-a* + locative allomorph *-an*; *a* reduced as in /-a/ final nouns (*neska* ‘(the) girl’ instead of \**neskaa*)
  - 3 determiner *-a* + locative allomorph *-n*
- *-an* is historically derived from consonant initial form (Hualde & Ortiz de Urbina 2003:179), parallel to general locative ending *-tan* (option 1 or 2)
  - vowel epenthesis preserves loc. *-an*, but not article: *azal-ean* ‘in/on the skin’ vs. *azala* ‘the skin’ (option 1)
  - with proper names, however, locative seems to be plain *-n* (with epenthesis after noun-final consonants): *Bilbo-n* ‘in Bilbao’, *Irun-en* ‘in Irun’ (option 3)

# Bizkaian Basque

- Karlos Arregi (p.c.) notes following argument from Bizkaian variants
- Hualde et al. (1994:87f.): stem-final /-a/ is
  - raised to /-e/ (or /-i/ in Lekeitio) before singular determiner
  - deleted in the plural

(13) *arbola* ‘tree’

(Karlos Arregi, p.c.)

<i>arbole-a</i>	abs.sg
<i>arbol∅-ak</i>	abs.pl
<i>arbole-a-ri</i>	dat.sg
<i>arbol∅-a-ri</i>	dat.pl

- loc.sg. *arbol-an* instead of \**arbole-a-n*
- hence the determiner is absent in the locative

## Proxy morphemes

- potential alternative with  $\sqrt{\text{BAIT}}$  ( $\sqrt{\text{GAN}}??$ ) as lexical root and *mutilaren* as regular genitive possessor
- *-gan* resembles proper names wrt. to morphophonological behaviour: voice assimilation of following stop, instead of deletion of /-n/:
  - *mutilarengandik* ‘from the boy’, *Berlindik* ‘from Berlin’
  - *mendietan* ‘in the mountains’ – *mendietantik* ‘from the mountains’
- but plain locative differs:  
*mutilarengan* ‘in the boy’ vs. *Berlinen* ‘in Berlin’
- *baita* behaves more like regular noun:  
*sorgin haien baitatik* ‘from those witches’ (de Rijk 2008:208)
- in the singular the genitive morpheme can be dropped:  
*mutilarengan/mutilaren baitan* ‘in the boy’

## If K were present with $p_{loc} \dots$

$$(14) \quad [ [ [ [ [ [ \sqrt{\text{LANTEGI } n } ]_{nP} \langle \# \rangle ]_{\#P} \# + D \{ \text{def, sg} \} ]_{DP} K ]_{KP} p_{loc} ]_{p_{loc}P} p_{dir} ]_{p_{dir}P}$$

$$(15) \quad a. \quad \text{Fusion of \# and D: } \sqrt{\text{LANTEGI}} \frown (n) \frown (\# + D \{ \text{def, sg} \}) \frown K \{ \text{abs} \}$$

$$\text{insertion: } \sqrt{\text{LANTEGI}} \frown (n, \emptyset) \frown (\# + D \{ \text{def, sg} \}, -a) \frown K \{ \text{abs} \}$$

$$\text{pruning: } \sqrt{\text{LANTEGI}} \frown (\# + D \{ \text{def, sg} \}, -a) \frown K \{ \text{abs} \}$$

*spell-out:* lantegia

b. *insertion:*

$$\{ (\# + D \{ \text{def, sg} \}, -a) \} \frown (K \{ \text{abs} \}, \emptyset) \frown (p \{ \text{loc} \}, -\text{tan}) \frown (p \{ \text{all} \}, -\text{ra})$$

$$\text{pruning: } \{ (\# + D \{ \text{def, sg} \}, -a) \} \frown (p \{ \text{loc} \}, -\text{tan}) \frown (p \{ \text{all} \}, -\text{ra})$$

*adaption:*

$$\{ (\# + D \{ \text{def, sg} \}, -a) \} \frown (p \{ \text{loc} \}, \emptyset) \frown (p \{ \text{all} \}, -\text{ra})$$

*pruning:*

$$\{ (\# + D \{ \text{def, sg} \}, -a) \} \frown (p \{ \text{all} \}, -\text{ra})$$

*spell-out:* \* lantegiara



## Animate locative singular

- assume that proxy morphemes (*-gan*, *baita*) instantiate non-animate *n*
- possible alternative: simple (semantically empty) lexical roots?

*mutilaren baitan* ‘in the boy’

