Basque plural clitics: A case study in Crossmodular Parallelism

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Joint work on Basque verbal morphology with Karlos Arregi
Morphotactics (Arregi & Nevins 2011)

Data Sources:

- Lekeitio (Biscayan): Hualde et al. 1994
- Berastegi (Guipuscoan): de Yrizar 1991
- Ibarrangelu, Kortezubi (Biscayan): Gaminde 1984
- Oñati (Biscayan): Badihardugu 2005

Crossmodular Parallelism

Operations on abstract morphological structures are the same as ones that operate on phonological representations.

- Same grammar, but different alphabet: phonological features in segments vs. abstract inflectional features in morphemes.

Precursors

- Feature geometry in representing morphosyntactic features (Bonet 1991, Starke 2001, Harley & Ritter 2002)
- Arboreal representations of metrical stress (Halle & Vergnaud 1980)
- Syntax-inspired locality principles in vowel harmony (Nevins 2010)

Fission

- Two exponents corresponding to one syntactic terminal node. Hebrew:
  - ti- xtev -u
    2- write -PL
  - ni- xtov
    1PL- write
- Fission in 2Pl but not 1Pl, even though both have the exact same syntax.
- Split exponence is thus a post-syntactic matter.

Classic Fission in Distributed Morphology

Noyer 1992, Halle 1997:

- Occurs *during* Vocabulary Insertion (postsyntactic assignment of exponence to abstract terminal nodes).
- Certain exponents (Hebrew 1Pl *ni*-) match all features on the terminal.
- Others (Hebrew number-neutral 2nd *ti*-) incompletely match them. Leftover feature(s) realized by a second instance of Vocabulary Insertion.
- Fission emerges due to the particular inventory of vocabulary entries.

Current study: Basque plural clitics

Fission in 2Pl & 3Pl in clitics adjoined to finite verbs:

- d -o -gu
  L -PRS.3SG -CL.E.1PL
- d -o -su -e
  L -PRS.3SG -CL.E.2 -CL.E.PL
- dx -a -ko -e (>dxake)
  L -PRS.3SG -CL.D.3 -CL.D.PL

(Examples from Lekeitio)

A new post-syntactic mechanism for Fission

Postsyntactic operation on terminal nodes prior to Vocabulary Insertion:

- Logically prior to details in vocabulary entries.
- Inspired by Crossmodular Parallelism:
  diphthongization in Southern Italian.
- 'Pied-piping' of orthogonal features (not a simple person/number split).
- Affords crosslinguistic predictions about recurrent patterns of splitting.

Morpheme placement

Standard placement of fissioned clitics (e.g. Lekeitio):
Adjacent:

- d -o -su -e
  L -PRS.3SG -CL.E.2 -CL.E.PL

Absolutive plural surfaces further to the right:

- s -aitxu -e -t
  CL.A.2 -PRS.2PL -CL.A.PL -CL.E.1SG

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Variation

Dialectal variation sheds light on the right analysis:

1. Lekeitio: adjacent (absolutive further to the right)
   d -o -tzu -e -t
   L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG
2. Ibarrangelu: all plural clitics at the right edge
   d -o -tzu -t -e
   L -PRS.3SG -CL.D.2 -CL.E.1SG -CL.D.PL
3. Kortezubi: all plural clitics adjacent *and* at the right edge
   d -o -tzu -e -t -e
   L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG -CL.D.PL

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Generalized Reduplication

Harris & Halle 2005: a formalism that unifies displacement & copying

- Phonology:
  - full and partial reduplication
  - metathesis
- Morphology:
  - morpheme displacement (metathesis)
  - morpheme doubling (partial reduplication)

Generalized Reduplication in Basque clitics

- Analysis inspired by Crossmodular Parallelism:
  - Output of Fission: adjacent morphemes
  - Nonadjacent plural clitics result from Generalized Reduplication
- Formalism predicts all attested variation in placement

Goals of the analysis

To develop an explanation based on Crossmodular Parallelism that:

- provides evidence for particular views of Fission & morpheme placement;
- makes sense of distribution, form and placement of Basque plural clitics;
- makes correct predictions about crossdialectal & crosslinguistic patterns of variation

Outline

Basque finite auxiliaries

Crossmodular Parallelism: Diphthongization & Fission

Crossmodular Parallelism: Metathesis & morpheme displacement

Outline

Basque finite auxiliaries

Most finite sentences have a verbal complex with a tensed auxiliary:

- (Gu-k) (seu-∅) ikus-i s-aittu-gu.
  we-ERG you-ABS see-PRF AUX
  'We have seen you.' Lekeitio (Biscayan)

- *s-*: 2Sg absolutive clitic
  -aittu-: 2Sg agreement, present tense
  -gu: 1Pl ergative clitic

Morphemes in finite auxiliaries

Abs – T/Agr – Dat – Erg – C

- T/Agr includes (present/past) tense and agreement
- C (often null) includes clause-type, tense, and agreement
- Pronominal clitics doubling absolutive, dative, and ergative arguments.

Plural clitics

- Plural clitics are split into two exponents in 2nd and 3rd person
- Plural = Singular + -*e*, except in 1st person

Absolutive

	Sg	Pl
1sg	n-	g-
2nd	s-	s-...-e
3rd	—	—

Dative

	Sg	Pl
1st	-t/da	-ku
2nd	-tzu	-tzu-e
3rd	-tz/ko	-tz/ko-e

Ergative

	Sg	Pl
1st	-t/da	-gu
2nd	-su	-su-e
3rd	-∅	-∅-e

(Lekeitio)

Stating the problems

Basque clitics sometimes involve splitting into 2 exponents:

- Across absolutive, dative and ergative:
  - 1Pl realized as single exponent
  - 2Pl/3Pl: number-neutral exponent + plural exponent (-*e*)
- Recurrence across cases begs a generalization beyond individual vocabulary entries

Variation in placement of -*e*:

- Within a dialect: adjacent (dative/ergative) vs. nonadjacent (absolutive)
- Across dialects: adjacent vs. nonadjacent; one vs. multiple copies
- Requires unified approach flexible enough to account for variation

Outline

Metaphony

Southern Italian languages (Calabrese 1998, 2005):

- In some morphological contexts (e.g. plural), stressed mid vowels become high.

Vowel inventory

i	u
e	o
ɛ	ɔ
a	

- [ɛ, ɔ] are [−high, −ATR]
- [e, o] are [−high, +ATR]
- [i, u] are [+high, +ATR]
- *[+high, −ATR]: antagonistic features

Metaphony & diphthongization in Arpino plurals

- [−high, +ATR] → [+high, +ATR]

Singular	Plural	
fjórə	fjúrə	‘flower’
mésə	mísə	‘table’

- [−high, −ATR]: *[+high, −ATR], triggering diphthongization

Singular	Plural		
fɔ́rtə	fwɔ́rtə	‘strong’	not *fʊrtə
vɛ́rmə	vjérmə	‘worm’	not *vɪrmə

The two segments in the diphthong share orthogonal features:
[αback, αround, −low]

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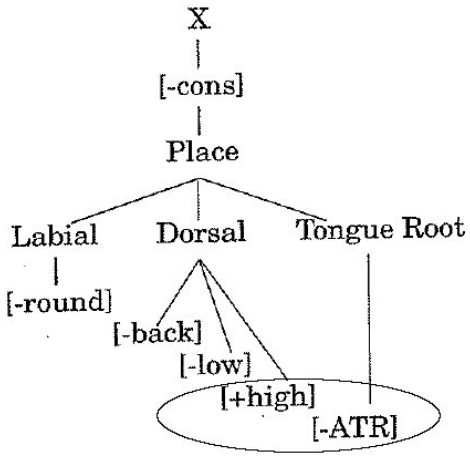
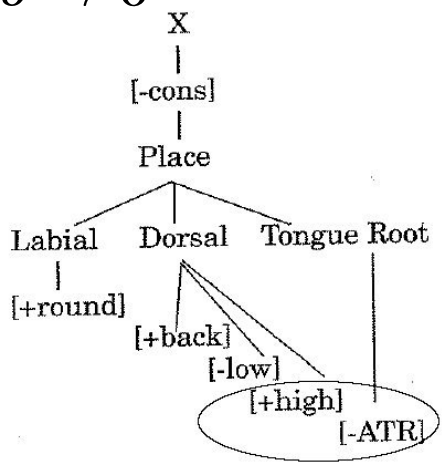
Calabrese: Diphthongization as Fission

Metaphony: *[+high, −ATR]

ɛ → ɪ



ɔ → ʊ



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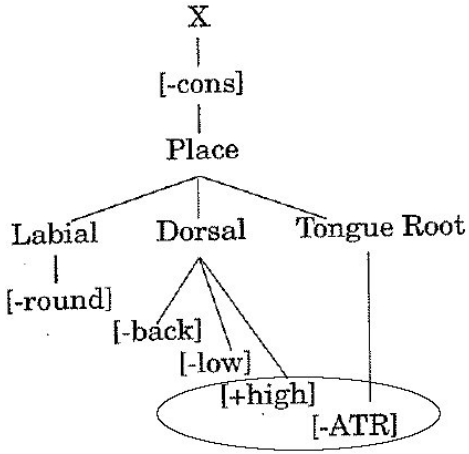
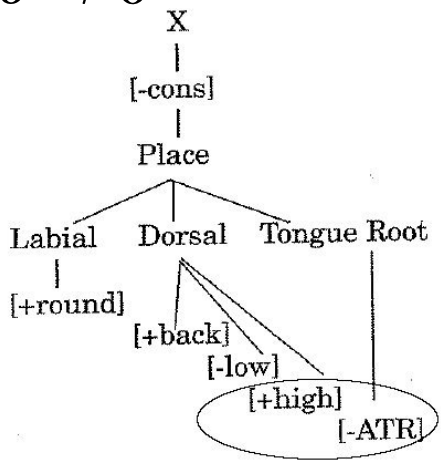
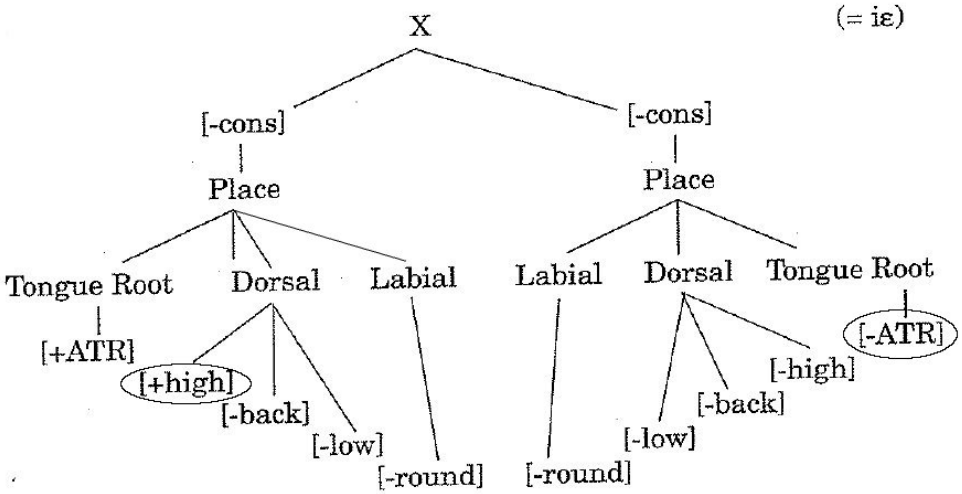
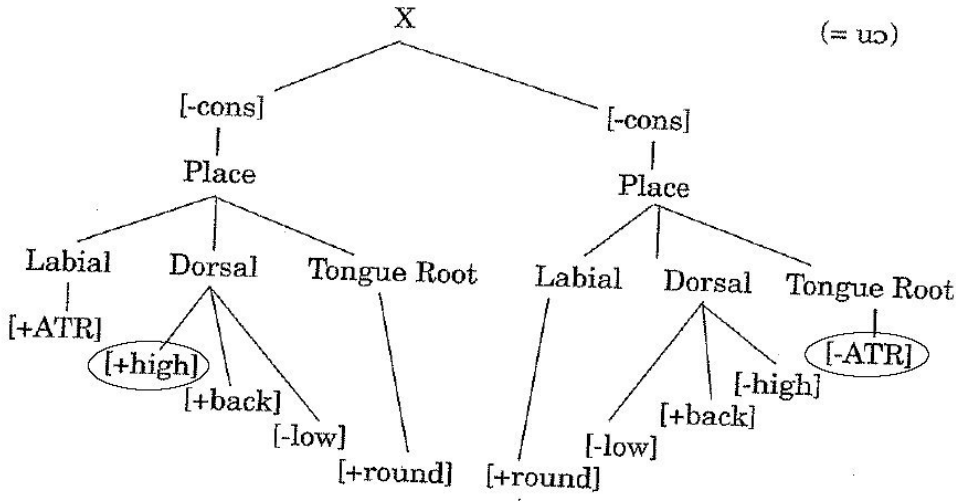


ɔ → ʊ



Antagonistic features split into two segments





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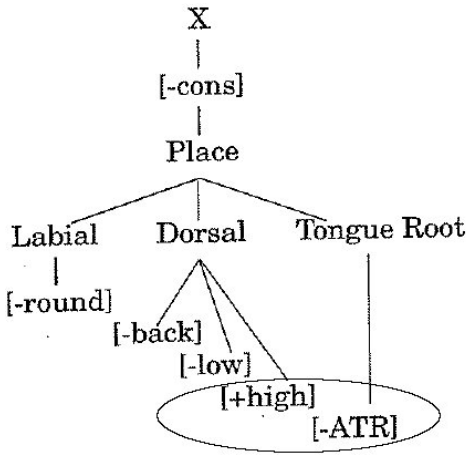

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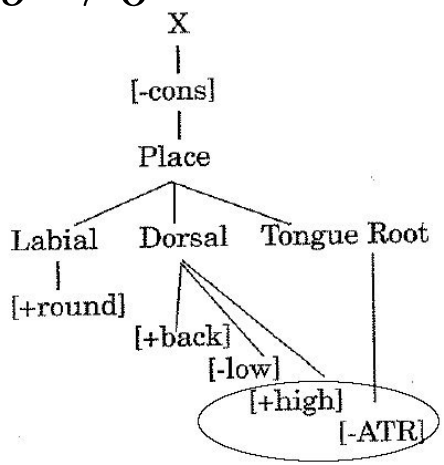
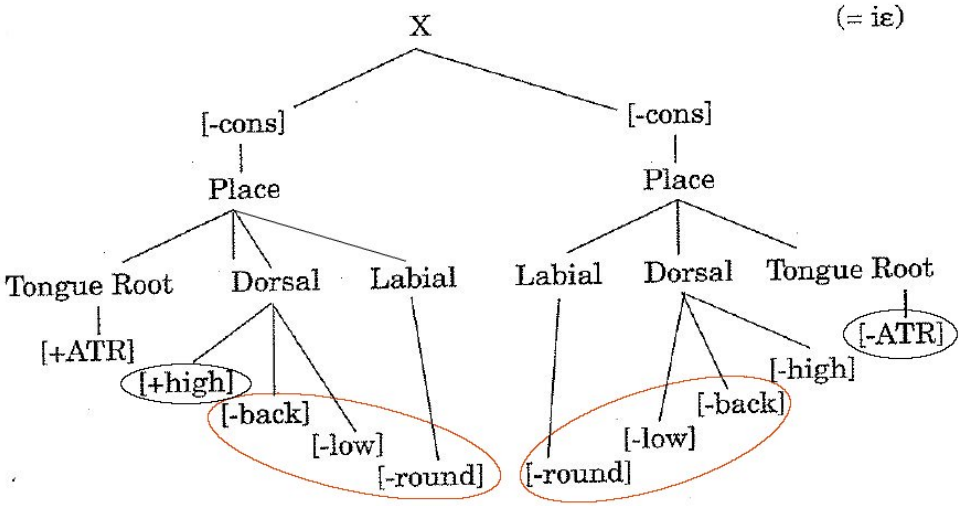
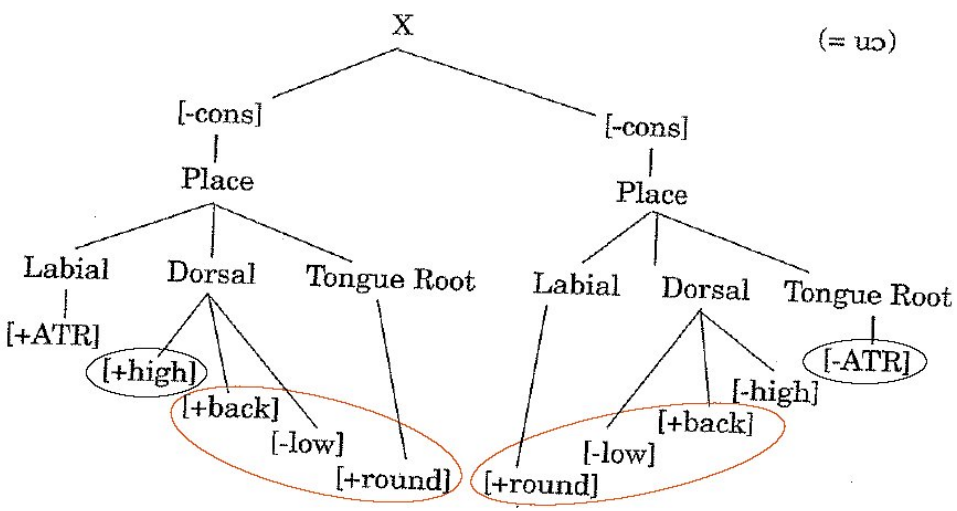


Antagonistic features split into two segments that share orthogonal features





(Other processes turn [jɛ, wɔ] to surface [je, wo])

Diphthongization as Fission

Two crucial properties of this mechanism:

- Certain feature combinations are marked:

$$*[+\text{high}, -\text{ATR}]$$

- Fission repair results in 2 segments that share orthogonal features:

$$\begin{bmatrix} \alpha\text{F} \\ +\text{high} \\ -\text{ATR} \end{bmatrix} \rightarrow \begin{bmatrix} \alpha\text{F} \\ +\text{high} \\ \dots \end{bmatrix} \begin{bmatrix} \alpha\text{F} \\ -\text{ATR} \\ \dots \end{bmatrix}$$

Basque plural clitics

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Absolutive

	Sg	Pl
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	Sg	Pl
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Ergative

	Sg	Pl
1st	-t/da	-gu
2nd	-su	-su-e
3rd	-∅	-∅-e

(Lekeitio)

Fission in Basque

Modeled on parallel with metaphony-driven diphthongization:

- Person:

1st	2nd	3rd
+participant	+participant	−participant
+author	−author	−author

- Number: [±singular]
- *[−author, −singular] (parallel to Italian *[+high, −ATR]):
  2nd/3rd person clitics can't be realized together with plural
- Postsyntactic (morphological) markedness.
  [−author, −singular] is fine as far as syntax/semantics is concerned.
- Fission repair: split the antagonistic features into 2 separate clitics.
  The fissioned clitics share orthogonal features, as in diphthongization.

No Fission in first person

- No Fission:

Absolutive	Dative	Ergative
+participant	+participant	+participant
+author	+author	+author
−singular	−singular	−singular
g-	*-ku*	*-gu*

- singular: *n-*, *-t/da*, *-t/da*

No Fission in first person

- No Fission:

[Absolutive +participant +author −singular]	[Dative +participant +author −singular]	[Ergative +participant +author −singular]
g-	*-ku*	*-gu*

- singular: *n-*, *-t/da*, *-t/da*

Fission in 2nd/3rd person

Violation of *[−author, −singular], triggering Fission:

- 2nd:

$$\begin{bmatrix} \text{Abs/Dat/Erg} \\ +\text{participant} \\ -\text{author} \\ -\text{singular} \end{bmatrix} \rightarrow \begin{bmatrix} \text{Abs/Dat/Erg} \\ +\text{participant} \\ -\text{author} \end{bmatrix} \begin{bmatrix} \text{Abs/Dat/Erg} \\ +\text{participant} \\ -\text{singular} \end{bmatrix}$$

s- (absolutive) *-e* (absolutive)
-tzu (dative) *-e* (dative)
-su (ergative) *-e* (ergative)

- 3rd:

$$\begin{bmatrix} \text{Dat/Erg} \\ -\text{participant} \\ -\text{author} \\ -\text{singular} \end{bmatrix} \rightarrow \begin{bmatrix} \text{Dat/Erg} \\ -\text{participant} \\ -\text{author} \end{bmatrix} \begin{bmatrix} \text{Dat/Erg} \\ -\text{participant} \\ -\text{singular} \end{bmatrix}$$

-tz/ko (dative) *-e* (dative)
-∅ (ergative) *-e* (ergative)

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-tz/ko (dative) *-e* (dative)
-∅ (ergative) *-e* (ergative)

Plural exponents

Plural clitic in Biscayan (e.g. Lekeitio) is always -*e*

2Pl.Abs: -*e*

$$\begin{bmatrix} \text{Absolutive} \\ +\text{participant} \\ -\text{singular} \end{bmatrix}$$

2Pl.Dat: -*e*

$$\begin{bmatrix} \text{Dative} \\ +\text{participant} \\ -\text{singular} \end{bmatrix}$$

2Pl.Erg: -*e*

$$\begin{bmatrix} \text{Ergative} \\ +\text{participant} \\ -\text{singular} \end{bmatrix}$$

3Pl.Dat: -*e*

$$\begin{bmatrix} \text{Dative} \\ -\text{participant} \\ -\text{singular} \end{bmatrix}$$

3Pl.Erg: -*e*

$$\begin{bmatrix} \text{Ergative} \\ -\text{participant} \\ -\text{singular} \end{bmatrix}$$

- Evidence that orthogonal case and person features must be present?

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- Evidence that orthogonal case and person features must be present?

Allomorphy in plural exponents

Non-Biscayan: *-te/e* depending on case and person features
Berastegi (Guipuscoan):

Absolutive	Sg	Pl
1sg	n-	g-
2nd	z-	z-...-te
3rd	—	—

Dative	Sg	Pl
1st	-t/da	-gu
2nd	-zu	-zu-e
3rd	-o	-o-e

Ergative	Sg	Pl
1st	-t/da	-gu
2nd	-zu	-zu-e
3rd	-∅	-∅-e

- -te: 2Pl.Abs

$$\begin{bmatrix} \text{Absolutive} \\ +\text{participant} \\ -\text{singular} \end{bmatrix}$$

- -e: elsewhere plural

$$[\ -\text{singular}\ ]$$

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Ergative

	Sg	Pl
1st	-t/da	-gu
2nd	-zu	-zu-e
3rd	-∅	-∅-e

- -te: 2Pl.Abs

$$\begin{bmatrix} \text{Absolutive} \\ +\text{participant} \\ -\text{singular} \end{bmatrix}$$

- -e: elsewhere plural

$$[\ -\text{singular}\ ]$$

Pied-piping of orthogonal features

- Both case and number are required to state the distribution of allomorphs.
- Understandable if the fissioned clitic is includes case & person features alongside number.

Fission: Summary

Crossmodular Parallelism in Fission:

- Due to (language-particular) constraints on marked feature combinations.
- Splits antagonistic features into 2 elements sharing orthogonal features.
- Same process, but on different primitives: phonological features in segments vs. inflectional features in morphemes.

Previous accounts

Previous accounts of Fission in DM:

- Driven by feature specification of exponents realizing morphemes.
- Cannot express the fact that fissed morphemes share orthogonal features.
- Fail to capture cross-categorial generalizations,
  e.g. 2nd/3rd, not 1st, undergo Fission in all cases in Basque.
- Make no crosslinguistic predictions about recurrent patterns of fission
  (e.g. 1st vs. 2nd/3rd, as opposed to other logically possible splits)

Exponence co-occurence constraints

Crosslinguistic generality of *[−author, ±singular]:

- Languages in which no plural undergoes Fission.
- Languages in which all plurals undergo Fission.
- No known language Fission in 1st but not in 2nd/3rd.
- No expected pattern of Fission in the singular but not plural.
- So are there other languages with the same pattern as Basque?

Languages with Fission only in 2/3

Georgian object clitics (3rd doesn't cliticize):

	Sg	Pl
1	m-xatav	gv-xatav
2	g-xatav	g-xatav-t
3	xatav	xatav

Kadiwéu object clitics (3rd doesn't cliticize)

1Sg	i-diki
1Pl	Go-diki
2Pl	Ga-dikil-i

Egyptian Arabic:

	Singular	*Plural*
1	ʔa-ktib	na-ktib
2m	ti-ktib	ti-ktib-u
2f	ti-ktib-i	ti-ktib-u
3m	yi-ktib	yi-ktib-u
3f	ti-ktib	yi-ktib-u

General Prospects

Pursuing Fission based on Crossmodular Parallelism leads one to formulate constraints on shared exponence of certain features.
Like all constraints, these share the properties of

- stating a generalization across vocabulary entries,
- enabling a division of labor between the constraint and its repair,
- spawning clear crosslinguistic predictions.

Outline

Placement of plural clitics

Output of Fission: often adjacent morphemes. Lekeitio:

- Dative & ergative

dx	-a	-tzu	-e	d	-o	-su	-e
L	-PRS.3SG	-CL.D.2	-CL.D.PL	L	-PRS.3SG	-CL.E.2	-CL.E.PL

- Person and number not adjacent in absolutives:

s	-aitxu	-e	-t
CL.A.2	-PRS.2PL	-CL.A.PL	-CL.E.1SG

Placement of plural clitics

Summary:

$$\text{Cl}_{Abs} - \text{T}_{Agr} - \text{Pl}_{Abs} - [\text{Cl}_{Dat} - \text{Pl}_{Dat}] - [\text{Cl}_{Erg} - \text{Pl}_{Erg}] - \text{C}$$

Lekeitio clitics:

Absolutive

	Sg	Pl
1sg	n-	g-
2nd	s-	s-. . . -e
3rd	—	—

Dative

	Sg	Pl
1st	-(s)t(a)	-(s)ku
2nd	-tzu	-tzu-e
3rd	-tz(a)	-tz-e

Ergative

	Sg	Pl
1st	-t/da	-gu
2nd	-su	-su-e
3rd	-∅	-∅-e

Local Plural Metathesis

$$\text{Cl}_{Abs} - \text{Pl}_{Abs} - \text{T} - \ldots \longrightarrow \text{Cl}_{Abs} - \text{T} - \text{Pl}_{Abs} - \ldots$$

For Lekeitio *saitxuet*:

- CL.A.2PL – PRS.2PL – CL.E.1SG → (Fission)

  CL.A.2 – CL.A.PL – PRS.2PL – CL.E.1SG → (Metathesis)

  CL.A.2 – PRS.2PL – CL.A.PL – CL.E.1SG → (VI)

  s – aitxu – e – t

Spanish imperatives

Similar Pl metathesis (Harris & Halle 2005):

- In-situ plural imperative:
  de -n -me -lo
  give -IMPR.PL -me -it
  'Y'all give it to me!'
- Metathesized:
  de -me -lo -n
  give -me -it -IMPR.PL
- Also doubling:
  de -n -me -lo -n
  give -IMPR.PL -me -it -IMPR.PL

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- Also doubling:
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  give -IMPR.PL -me -it -IMPR.PL

Generalized Reduplication

Harris & Halle 2005 (Raimy 2000, Frampton 2009)
Accounts for different phonological operations:

- Full reduplication: [ ]
  ABCD → A[BC]D → A–BC–BC–D
- Partial reduplication: ⟩ or ⟨
  ABCD → A[B⟩C]D →
  A–B C–BC–D →
  A–C–BC–D
  ABCD → A[B⟨C]D →
  A–BC-B C –D →
  A–BC–B–D
- Metathesis: ⟩ and ⟨
  ABCD → A[B⟩⟨C]D →
  A– B C–B C –D →
  A–C–B–D

Generalized Reduplication

Harris & Halle 2005 (Raimy 2000, Frampton 2009)
Accounts for different phonological operations:

- Full reduplication: [ ]
  ABCD → A[BC]D → A–BC–BC–D
- Partial reduplication: ⟩ or ⟨

  ABCD → A[B⟩C]D →
  A–B C–BC–D →
  A–C–BC–D

  ABCD → A[B⟨C]D →
  A–BC-B C –D →
  A–BC–B–D
- Metathesis: ⟩ and ⟨
  ABCD → A[B⟩⟨C]D →
  A–B C–B C –D →
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- Metathesis: ⟩ and ⟨
  ABCD → A[B⟩⟨C]D →
  A–B C–B C –D →
  A–C–B–D

Variation in Spanish imperatives

Generalized Reduplication applied to linearized morphemes explains variation in Spanish imperatives: minimal change in bracketing

- In-situ plural imperative:
  de -n -me -lo
  give -IMPR.PL -me -it
- Metathesis
  de[n⟩⟨melo] → de–n melo–n melo → de–melo–n
- Doubling = partial reduplication
  de[n⟨melo] → de–nmelo–n melo → de–nmelo–n

Formalization of some types of DM merger
(Marantz 1988, Bobaljik 1995, Embick & Noyer 2001)

Generalized Reduplication in Basque clitics

Local Plural Metathesis

$$\text{Cl}_{Abs}\ \text{Pl}_{Abs}\ \text{T}\ \text{X} \longrightarrow \text{Cl}_{Abs}\ [\text{Pl}_{Abs}\ \rangle\langle\ \text{T}\ ]\ \text{X}$$

Lekeitio *saitxuet*:

- CL.A.2 CL.A.PL PRS.2PL CL.E.1SG →
- CL.A.2 [CL.A.PL ⟩⟨ PRS.2PL] CL.E.1SG →
- CL.A.2 CL.A.PL PRS.2PL CL.A.PL PRS.2PL CL.E.1SG →
- CL.A.2 PRS.2PL CL.A.PL CL.E.1SG →
- s aitxu e t

Prediction

- Close formal link metathesis and doubling predicts microvariation in time and space
- the mo-st unkind-est cut
- d-id n't they lef-t
- Theory developed for displacement literally leads us to expect doubling elsewhere

Dialectal variation

- Some Biscayan dialects have more cases of nonadjacent -*e*
- This variation provides evidence for Generalized Reduplication

Kortezubi

Additional -*e* at the right edge:

Lekeitio:

d -o -su -e -s
L -PRS.3PL -CL.E.2 -CL.E.PL -3PL

d -o -tzu -e -t
L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG

s -aitxu -e -t
CL.A.2 -PRS.2PL -CL.A.PL -CL.E.1SG

Kortezubi:

d -o -su -e -s -e

d -o -tzu -e -t -e

s -aitxu -e -t -e

Ibarrangelu

	Lekeitio In-situ	Kortezubi Right edge copy
Ergative:	d-o-su-e-s	d-o-su-e-s-e
Dative:	d-o-tzu-e-t	d-o-tzu-e-t-e
Absolutive:	s-aitu-e-t	s-aitxu-e-t-e
Spanish:	de-n-me-lo	de-n-me-lo-n Doubling

Ibarrangelu

	Lekeitio In-situ	Kortezubi Right edge copy	Ibarrangelu Right edge only
Ergative:	d-o-su-e-s	d-o-su-e-s-e	d-o-su-s-e
Dative:	d-o-tzu-e-t	d-o-tzu-e-t-e	d-o-tzu-t-e
Absolutive:	s-aitu-e-t	s-aitxu-e-t-e	s-aitxu-t-e
Spanish:	de-n-me-lo	de-n-me-lo-n Doubling	de-me-lo-n Metathesis

Variation due to minimal change in the rule

- Lekeitio: in-situ

  L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG

  d -o -tzu -e -t

- Kortezubi: Long Distance Doubling

  L -PRS.3SG -CL.D.2 -[CL.D.PL ⟨ -CL.E.1SG]

  L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG -CL.D.PL

  d -o -tzu -e -t -e

- Ibarrangelu: Long Distance Metathesis

  L -PRS.3SG -CL.D.2 -[CL.D.PL ⟩⟨ -CL.E.1SG]

  L -PRS.3SG -CL.D.2 -CL.E.1SG -CL.D.PL

  d -o -tzu -t -e

Variation due to minimal change in the rule

- Lekeitio: in-situ

  L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG

  d -o -tzu -e -t

- Kortezubi: Long Distance Doubling

  L -PRS.3SG -CL.D.2 -[CL.D.PL ⟨ -CL.E.1SG]

  L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG -CL.D.PL

  d -o -tzu -e -t -e

- Ibarrangelu: Long Distance Metathesis

  L -PRS.3SG -CL.D.2 -[CL.D.PL ⟩⟨ -CL.E.1SG]

  L -PRS.3SG -CL.D.2 -CL.E.1SG -CL.D.PL

  d -o -tzu -t -e

Variation due to minimal change in the rule

- Lekeitio: in-situ

  L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG

  d -o -tzu -e -t

- Kortezubi: Long Distance Doubling

  L -PRS.3SG -CL.D.2 -[CL.D.PL ⟨ -CL.E.1SG]

  L -PRS.3SG -CL.D.2 -CL.D.PL -CL.E.1SG -CL.D.PL

  d -o -tzu -e -t -e

- Ibarrangelu: Long Distance Metathesis

  L -PRS.3SG -CL.D.2 -[CL.D.PL ⟩⟨ -CL.E.1SG]

  L -PRS.3SG -CL.D.2 -CL.E.1SG -CL.D.PL

  d -o -tzu -t -e

Limits on variation: Wackernagel

Word internal second position condition on T:

- All dialects have Local Plural Metathesis of absolutive *-e*
  Cl_{Abs} T Pl_{Abs} *Cl_{Abs} Pl_{Abs} T
- No dialect with Local Plural *Doubling* of absolutive *-e*. Why Not?
  *Cl_{Abs} Pl_{Abs} T Pl_{Abs}

Word-internal Wackernagelity: Independent evidence

$$\text{Cl}_{Abs} - \text{T}_{Agr} - \text{Cl}_{Dat} - \text{Cl}_{Erg} - \text{C}$$

Other effects of Wackernagel condition:

- Satisfied by Cl_{Abs} (syntax)

  n -a -su

  CL.A.1SG -PRS.1SG -CL.E.2SG

- If Cl_{Abs} absent, epenthetic L, ...

  d -o -su

  L -PRS.3SG -CL.E.2SG

- . . . or a metathesized/copied clitic

  Metathesized ergative (e.g. Lekeitio):

  s -endu -an

  CL.E.2SG -PST.3SG -CPST

  Doubled dative (e.g. Oñati):

  n -o -sta -su -n

  CL.D.1SG -PST.3SG -CL.D.1SG -CL.E.2SG -CPST

Word-internal Wackernagelity: Independent evidence

$$\text{Cl}_{Abs} - \text{T}_{Agr} - \text{Cl}_{Dat} - \text{Cl}_{Erg} - \text{C}$$

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  Doubled dative (e.g. Oñati):

  n -o -sta -su -n

  CL.D.1SG -PST.3SG -CL.D.1SG -CL.E.2SG -CPST

Limits on variation: Person > Number

Person > Number Order (Trommer 2008, Harbour 2008)
Crossdialectal generalizations in Basque:

- In situ Pl is right-adjacent to person clitic
- Plural Metathesis is always to the right
  $\text{Cl}_{Person} \ldots \text{Cl}_{Pl}$ $\quad$ $*\text{Cl}_{Pl} \ldots \text{Cl}_{Person}$
- In Plural Doubling, the in situ copy is always leftmost
  $\text{Cl}_{Person}\ \text{Cl}_{Pl} \ldots \text{Cl}_{Pl}$ $\quad$ $*\text{Cl}_{Pl} \ldots \text{Cl}_{Person}\ \text{Cl}_{Pl}$

Morpheme placement: Summary

Account of placement of plural clitics inspired by Crossmodular Parallelism

- Seemingly idiosyncratic conditions on placement of -*e* have a systematic account once we understand variation.
- Variation explained by Generalized Reduplication: unifies metathesis & doubling
- The formalism gives teeth to notion of local dislocation (Embick & Noyer 2001), which didn't handle doubling
- Constraints (Wackernagel, P>O Order): limits to variation

Conclusions

Basque plural clitics in the light of Crossmodular Parallelism:

- Fission = Diphthongization
  - Predicts sharing of orthogonal features
  - Makes correct predictions about crosslinguistic patterns of Fission
- Placement due to Generalized Reduplication & linear constraints
  - Makes correct predictions about variation in displacement & doubling
  - Constraints limit this variation

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