

# Morpheme displacement and copying in a modular theory of morphology

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Approaches to the Lexicon (Roots III)  
The Hebrew University of Jerusalem  
13–16 June 2011

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

What accounts for the surface position of morphemes?

- ▶ Distributed Morphology: syntax, to a great extent

Standard placement of fissioned clitics (Lekeitio; Nevins, 10 minutes ago):  
 (All data from Gaminde 1984)

Adjacent:

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

Absolute 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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Alternatives:

1. Syntax: separate person & number probes for absolutive clitics.
2. Output of Fission altered by postsyntactic displacement.

Dialectal variation sheds light on the right analysis.

## Variation:

1. Lekeitio: dative/ergative adjacent; absolutive further to the right

d -o            -tzu        -e            -t

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

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



Generalized Reduplication (Harris & Halle 2005): a formalism that unifies

- ▶ full and partial reduplication, metathesis
- ▶ morpheme displacement (metathesis)
- ▶ morpheme doubling (partial reduplication)

Patterns of variation in *-e* placement are not accidental:

## Analysis

- ▶ Output of Fission: adjacent morphemes
- ▶ Nonadjacent plural clitics result from postsyntactic Generalized Reduplication

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Patterns of variation in *-e* placement are not accidental:

## Analysis

- ▶ Output of Fission: adjacent morphemes
- ▶ Nonadjacent plural clitics result from postsyntactic Generalized Reduplication

- ▶ The formalism predicts all attested variation in placement of plural clitics.
- ▶ Surface position of morphemes is the result of syntactic and postsyntactic operations.

# Outline

The placement of plural clitics

Generalized Reduplication

Long distance metathesis and doubling

Constraints on variation

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The placement of plural clitics

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## Output of Fission: adjacent morphemes. Lekeitio:

## ▶ Dative &amp; 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		

## ▶ Not in absolutes:

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

## Summary:

$$Cl_{Abs} - T_{Agr} - Pl_{Abs} - [Cl_{Dat} - Pl_{Dat}] - [Cl_{Erg} - Pl_{Erg}] - C$$

## Lekeitio clitics:

Absolutive			Dative			Ergative		
	Sg	Pl		Sg	Pl		Sg	Pl
1sg	n-	g-	1st	-(s)t(a)	-(s)ku	1st	-t/da	-gu
2nd	s-	s-...-e	2nd	-tzu	-tzu-e	2nd	-su	-su-e
3rd	—	—	3rd	-tz(a)	-tz-e	3rd	-∅	-∅-e

## Local Plural Metathesis

$Cl_{Abs} - Pl_{Abs} - T - \dots \rightarrow Cl_{Abs} - T - Pl_{Abs} - \dots$

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



# Outline

The placement of plural clitics

**Generalized Reduplication**

Long distance metathesis and doubling

Constraints on variation

## Similar Pl metathesis in Spanish imperatives (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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de -me -lo -n

give -me -it -IMPR.PL

- ▶ Also doubling:

de -n -me -lo -n

give -IMPR.PL -me -it -IMPR.PL

## Harris & Halle 2005: Generalized Reduplication (Raimy 2000, Frampton 2009)

▶ 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

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 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

## Harris & Halle 2005: Generalized Reduplication (Raimy 2000, Frampton 2009)

▶ Full reduplication: [ ]  
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▶ 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 applied to linearized morphemes explains variation in Spanish imperatives: minimal change in brackets inserted

- ▶ 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-**n**melo-**n**

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

Basque absolutive plural:

## Local Plural Metathesis

$$Cl_{Abs} Pl_{Abs} T X \rightarrow Cl_{Abs} [Pl_{Abs} \rangle \langle T ] X$$

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: dialectal alternation between metathesis and doubling

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The placement of plural clitics

Generalized Reduplication

Long distance metathesis and doubling

Constraints on variation

- ▶ Some 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

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

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

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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

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The placement of plural clitics

Generalized Reduplication

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Constraints on variation

## Word internal Wackernagel condition on T:

- ▶ All dialects have Local Plural Metathesis of absolutive *-e*  
 $Cl_{Abs} T Pl_{Abs} \quad *Cl_{Abs} Pl_{Abs} T$
- ▶ No dialect with Local Plural *Doubling* of absolutive *-e*  
 $*Cl_{Abs} Pl_{Abs} T Pl_{Abs}$

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

Independent evidence for word-internal Wackernagel condition on T:

- ▶ Satisfied by  $\text{Cl}_{Abs}$  (syntax)

**n**            -a            -su  
**CL.A.1SG** -PRS.1SG -CL.E.2SG

- ▶ If  $\text{Cl}_{Abs}$  absent, epenthetic L, ...

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

- ▶ ... or a metathesized/copied clitic

Metathesis ergative (Lekeitio):

**s**            -endu        -an  
**CL.E.2SG** -PST.3SG -CPST

Doubled dative (Oñati):

**n**            -o            -sta            -su            -n  
**CL.D.1SG** -PST.3SG -**CL.D.1SG** -CL.E.2SG -CPST

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

Independent evidence for word-internal Wackernagel condition on T:

- ▶ Satisfied by  $\text{Cl}_{Abs}$  (syntax)
  - n**            -a            -su
  - CL.A.1SG** -PRS.1SG -CL.E.2SG
- ▶ If  $\text{Cl}_{Abs}$  absent, epenthetic L, ...
  - d** -o            -su
  - L** -PRS.3SG -CL.E.2SG
- ▶ ... or a metathesized/copied clitic
  - Metathesis ergative (Lekeitio):
  - s**            -endu        -an
  - CL.E.2SG** -PST.3SG -CPST
  - Doubled dative (Oñati):
  - n**            -o            -sta            -su            -n
  - CL.D.1SG** -PST.3SG -**CL.D.1SG** -CL.E.2SG -CPST

## Word-internal Wackernagel in other languages:

- ▶ Lithuanian reflexive *s(i)* (Nevis & Joseph 1992, Embick & Noyer 2001)
- ▶ Old Irish object clitics (Adger 2006)

Person > Number Order (Trommer 2008, Harbour 2008):

- ▶ In situ Pl is right-adjacent to person clitic

- ▶ Plural Metathesis is always to the right

$Cl_{Person} \dots Cl_{Pl} \quad *Cl_{Pl} \dots Cl_{Person}$

- ▶ In Plural Doubling, the in situ copy is always leftmost

$Cl_{Person} Cl_{Pl} \dots Cl_{Pl} \quad *Cl_{Pl} \dots Cl_{Person} Cl_{Pl}$

## Conclusions & further issues

- ▶ 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
- ▶ Both syntax & postsyntax needed to account for morpheme order.
- ▶ Constraints (Wackernagel, P>O Order): impossible metatheses & copies



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