
Reduplication Patterns in Georgian

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The aim of the presentation

- To present extensive data on Georgian reduplication
- To account for formal properties of reduplication:
 - Prosodic properties of base and reduplicant
 - Segmental properties of base and reduplicant

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The main proposals

Prosodic

- Reduplicant, regardless of the shape/size of base, has disyllabic C(C)VC(C)V shape in Georgian.

Segmental

- Both reduplicant and base have unmarked segmental structure.
- Marked structures do not reduplicate.

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Organization of presentation

- I. Introduction
- II. Reduplication data
- III. Theoretical questions/problems
- IV. Prosodic analysis of reduplication
- V. Segmental analysis of reduplication
- VI. Conclusions

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I. Introduction

Function

- Verbal forms
 - reduplication occurs in verbal forms to mark continuative aspect or intensity.
- Nominal forms
 - to form the collective plural.
- Adverbs
 - to form words with another meaning
- Reduplication is widely used in onomatopoeia.

Place

Reduplicant commonly attaches to a base as a suffix.

Type

Total reduplication, which involves copying of a complete base, is quite common. Partial reduplication is also found.

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II. Data

Source

- The extensive study of verbal and nominal reduplication by Ertelishvili (1970, 1980)
- Exlanatory Dictionary of Georgian (1986)
- My own studies on reduplication (Butskhrikidze 2002, 2005).

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Verbal forms

panci-punci 'quivering'
 parti-purti 'fuss'
 lac'i-luc'i 'crack'

bak'a-buk'i 'to make a noise with heels'
 lac'a-luc'i 'crash, crack'
 čxara-čxuri 'tickling'
 txlaša-txluši 'to slap, smack'
 baq'a-buq'i 'buttering, mumbling'
 k'ak'a-k'uk'i 'to knock'
 pacxa-pucxi 'fuss, bustle'

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Nominal forms

vak'e-vak'e 'lowland, valley'
 k'ona-k'ona 'bunch of flowers'
 kuča-kuča 'street to street'
 are-mare 'environs, environment'
 ačxa-bačxa 'not clear, e.g. writing'

Adverbial forms

pirdapir 'straight'
 guldagul 'diligently'
 kardakar 'door to door'
 mxardamxar 'shoulder to shoulder, together'

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Onomatopoeia

si <u>si</u> ni	'hissing'
t'at' <u>ani</u>	'speaking loudly'
c' <u>ic</u> 'ini	'yelping'
č' <u>ič</u> 'ini	'speaking piercingly'
q' <u>iq</u> 'ini	'croaking'
ši <u>ši</u> ni	'hissing, spitting'

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Types of reduplication

Total/Full

kuča-kuča
 vak'e-vak'e
 k'ona-k'ona
 puspusi

Partial

bak'a-buk'i
 lac'a-luc'i
 čxara-čxuri
 txlaša-txluši

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III. Questions:

- What is the size/shape of reduplicant? Is it
 - morphological
 - prosodic/metrical
 i.e. is it word, root, stem, foot or syllable?
- What are segmental characteristics of reduplicant?
 - Does reduplicant present marked or unmarked segmental structure of Georgian?

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General Question/Problem:

- To find a **unified account** for the diverse patterns of reduplication in Georgian?

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Theoretical background

(based on cross-linguistic study of reduplication phenomena)

➤ Shape invariance

- Reduplication tends to be defined in prosodic units independent of the base.

➤ Unmarkedness

- Reduplicants tend to have phonologically unmarked structures *vis-à-vis* the phonotactics of the language.

(Kager, 1999:199)

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Shape invariance

- The reduplicant tends to have an invariant prosodic shape that has no one-to-one relation with a prosodic unit in the base. The phenomena is also known as reduplicative *template*.
- This observation of shape invariance was first stated by Moravcsik (1978), and has become the basis of the 'template-and-association' theory of reduplication (e.g. Marantz 1982, Clements 1985, McCarthy and Prince 1986). The OT approach to reduplication is, to some extent, a continuation of templatic theory.

Nootka (σ): CV(V) č̣i- čims-'i:h 'hunting bare'
 Diyari (Ft): CVCV t'il.pa- t'il.par.ku 'bird species'

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Unmarkedness

- The observation that reduplicants tend to have unmarked phonological structures was stated explicitly by Steriade (1988).
- Three possible types of simplifications are:
 - a. Onset simplification
 - b. Coda simplification
 - c. Elimination of consonantal nuclei

Tagalog: CC>CV

ta-trabaho, bo-bloaut

Nootka: CVC>CV

wa:-wa:s-čil

Sanskrit:

va-vr̥ma

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Predictions for Georgian

- Possible shapes of reduplicant in Georgian:
 - Disyllabic foot/minimal word?
 - Syllable?
- Possible markedness constraints/simplifications in reduplicant:
 - Onset simplification
 - Coda simplification

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IV Prosodic analysis

Full

kuča-kuča

vak'e-vak'e

k'ona-k'ona

puspusi

c'ak'c'ak'i

čakčaki

Partial

panci-punci

parti-part'i

lac'i-luc'i

bak'a-buk'i

čxara-čxuri

txlaša-txluši

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Proposal: Invariant shape of reduplicant in Georgian is C(C)VC(C)V

- Support for this claim outside reduplication is existence of the disyllabic minimal word constraint in Georgian (Butskhrikidze 2002).
- Evidence:
 - Accent assignment
 - Formation of inalienable construction
 - Monosyllabic lengthening in *yes-no* questions

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Base and reduplicant match in shape, both have C(C)VC(C)V structure

Full reduplication	
Base	Reduplicant
CVCV	CVCV
kuča- <u>kuča</u>	
vak'e- <u>vak'e</u>	
k'ona- <u>k'ona</u>	
Partial reduplication	
Base	Reduplicant
CCVCV	CCVCV
čxara- <u>čxuri</u>	
txap'a- <u>txup'i</u>	
Base	Reduplicant
CVCCV	CVCCV
panci- <u>punci</u>	
parti- <u>purti</u>	

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Base-reduplicant mismatch

What happens in the reduplicant when base is less than CVCV?, i.e. CVC, VCV or CV?

- Vowel insertion?
- Consonant epenthesis?
- Syllable insertion?

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Vowel Insertion

Base Reduplicant
CVC CVCV

puspusi
 c'ak'c'ak'i
 čakčaki

Note: *-i* is inserted in reduplicant to meet disyllabic constraint! *-i* is *the* nominative case marker, the default vowel ending any CVC stem/root in Georgian outside reduplication. Thus, CVC-CVC reduplication construction is ill-formed.

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Consonant epenthesis

Base Reduplicant
VCV CVCV

are-mare
 ača-bača
 ačxa-bačxa

Note: the consonants *m* and *b* are inserted in the reduplicant. Obviously the consonants are inserted to avoid the hiatus, otherwise marked environment in Georgian. Outside reduplication *b*-epenthesis (to resolve a hiatus) is attested in the derived form *m-ezo-b-el-i* "neighbor".

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Syllable insertion

Base **Reduplicant**
CVC **CVCVC**

pirdapir
 guldagul
 kardakar
 mxardam~~x~~ar

Note: the conjunction *da* is added to the reduplicant to make it disyllabic. Cases of *da* insertion to the base of the CVCV type are not known to me.

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Syllable insertion

Base **Reduplicant**
CV **CVCV**

sisini
 t'a'ani
 c'i'ini
 č'i'ini

Note: These are onomatopoetic forms. *si*, *t'a*, *ci* or *č'i* do not exist as independent morphemes in Georgian. The syllable *ni* is inserted to form the disyllabic reduplicants. Outside reduplication *ni* is attested in infinitival forms, e.g. *lac'ani*, *bak'uni*, etc.

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Conclusions (Prosodic analysis)

- As proposed, reduplicant seems to have invariant C(C)VC(C)V shape in Georgian.
- When base has C(C)VC(C)V structure, full or partial (with a vowel alternation) reduplication constructions are formed.
- When base is less than C(C)VC(C)V, several phonological processes take place in the reduplicant: vowel insertion, consonant epenthesis or syllable insertion, depending on the base type.

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V Segmental analysis

- Vowel alternation
- Consonant alternation
- Complex segment formation (harmonic clusters and C+/v/) in reduplicant

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Vowel alternation

panci-punci
 parti-pur̥ti
 lac'i-luč'i

račxa-ručxi
 pacxa-pučxi
 razɣa-ruɣi
 txlaša-txluši
 k'ak'a-k'uk'i
 pacxa-pučxi

Note: alternation of low and high vowels in reduplication is cross-linguistically well attested.

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Consonant alternations

r/l

bar-bali
 t'ar-t'ali
 kir-kili
 gur-guli
 čur-čuli

Note: r/l dissimilation is known outside reduplication in Georgian, e.g. *kart-**ul-i***, *megr-**ul-i***, but *k'ax-**ur-i***, *svan-**ur-i***.

n/l,r

san- <u>sali</u>	tkon- <u>tkori</u>
sun- <u>suli</u>	tan- <u>tari</u>
k'un- <u>k'uli</u>	
can- <u>cali</u>	

Note: the sonorant *n* in CVC base is always changed by another sonorant *r* or *l* in reduplicant.

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Complex segment formation

(Harmonic clusters and C + /v/ (labialized complex segments) are created in the reduplicant)

Harmonic clusters

zurzγuli

dudyuni

tantkari

c'inc'k'ili

C + /v/ sequences

sirsvali

cercveli

čirčvali

γirγvali

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CCVC-CCVCV

CC=harmonic clusters or C+/v/

tkontkori

sk'up'sk'up'i

txap'txap'i

dgandgari

t'q'up't'q'up'i

k'vink'vili

γanγvali

xvarxvari

xvanxvali

q'vang'q'vali

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CCVC-CCVCV

CC=obstruent + sonorant

tlaxtlaxi
 c'rup'c'rup'i
 kniškniši

- Harmonic clusters and C+/v/ sequences are considered as complex segments (Butskhrikidze 2002).
- Obstruent + sonorant sequences are the most unmarked consonant clusters in Georgian (Butskhrikidze 2002).

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Conclusions (Segmental analysis)

- Unlike predictions made for reduplicant:
 - Onset simplification
 - Coda simplification
 We find complex segment formation in reduplicant.
- Nevertheless the clusters created in reduplicant (harmonic clusters and C+/v/) are unmarked in Georgian.
- Marked structures simply do not participate in reduplication process.

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VI General Conclusions

- Reduplicant, regardless of the shape/size of base, has disyllabic C(C)VC (C)V shape in Georgian.
- Both reduplicant and base have unmarked segmental structure.
- Marked structures do not reduplicate.