Patterns of phonosemantic reduplication in Kartvelian (South Caucasian) languages*

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Abstract

In terms of phonosemantic doubling, root reduplication (in combination with affixation) is the most productive technique in Kartvelian languages (Georgian, Megrelian, Laz, Svan). The paper is a description of patterns of Kartvelian phonosemantic reduplication with respect to their both morphological and phonological parameters. The following types have been identified: 1. Root reduplication; 2. Syllable reduplication; 3. Redupluication with affixation. Each type has its respective sub-types. Based on abounding empirical data, the paper is an attempt to scrutinize and detect whether and how the above mentioned patterns are valid for all the four Kartvelian languages and to draw inferences about occurring formal and/or functional regularities associated with phonosemantic reduplication.

Keywords: phonosemantic reduplication, Kartvelian languages, reduplication patterns

1. Introduction

Since the present paper is an attempt to establish principal patterns of reduplication, specifically, those of phonosemantic reduplication, in Kartvelian languages, initially we will provide explicit definitions for the key issues and notions to be dealt with. Kartvelian languages constitute a branch of the Caucasian language family, and, since all of them are spoken in the southern part of the Caucasus, they are otherwise referred to as South Caucasian. The ISO 639-5 code for the branch is *ccs*; Glottolog: *kart1248*. As for the individual languages, they are the following: Georgian (ISO 639-3: *geo/kat*; Glottolog: *nuc11302*), Svan (ISO 639-3: *sva*; Glottolog: *svan1243*); Megrelian (ISO 639-3: *xmf*; Glottolog: *imng1252*), Laz (ISO 639-3: *lzz*; Glottolog:

lazz1240); many linguists conceive of Megrelian and Laz as dialects of the language called Zan (ISO 639-3: no code; Glottolog: *zann1245*).

> 'According to the standard interpretation, Mingrelian and Laz, which once formed a dialect continuum, are genetically closer to Georgian, with the archaic Svan language standing somewhat apart from its sister languages. There are, however, features that cut across genetic boundaries, for instance the development of additional evidential forms found in Mingrelian, Laz, Svan and some western and southern Georgian dialects. Similarly, specific analytic future tense formations (derived from 'to want') are found in some dialects both of Laz and of Southern Georgian, etc. In general, these languages have been in contact with each other for a very long time, and many features must have spread across dialect and language boundaries.'
>
> (Boeder 2005: 6-7)

Kartvelian languages have a rich consonant system where stops and affricates are distinguished according to a triadic opposition between voiced, voiceless aspirate, and ejective. For all of their differences, Kartvelian languages have preserved fundamentally the same agglutinative verb structure. Their peculiar structural properties include split ergativity and verb polypersonalism; verbs can show agreement with the subject, object, and indirect object. The verbal system is very complex; the languages make two distinctions, between stative or active and transitive or intransitive verbs. Tense/Aspect/Mood divides into series, and the forms of subject, object, and indirect object agreement marked on the verb vary by series.

All the Kartvelian languages are rich in dialect varieties:

> 'Identification of dialects of the Kartvelian languages is based on the linguistic (complex) principle – in characterizing the dialects, phonetic, morphological, syntactic and lexical peculiarities of each dialect are taken into consideration.'
>
> (Jorbenadze 1991: 19)

As for reduplication, since the time when the earliest classification of the phenomenon appeared back in 1862, introduced by August Friedrich Pott dividing *doubling* ('Doppelung') into two sub-types: *gemination* and *reduplication*, and conceiving of gemination, as different from the present-day understanding of the term, as *total doubling* ('Wiederholung im Ganzen') and of reduplication as *partial doubling* ('verkürzte und nur zum Theil, also bloß andeutungsweise vollzogene Wiederholung') (Pott 1862: 16), no drastic changes have been initiated in literature (for instance, Hurch 2005; Inkelas & Zoll 2005; Moravcsik 1978; Raimy 2000; Stolz et al. 2011). Hence, in the present paper we accept the following definition: reduplication is a phono-morpho-syntactic process whereby morphological and phonological items are repeated either totally or partially or with a slight modification. Thus, its inventories are twofold: phonological – syllables and moras, and morphological – roots, stems, affixes. As for phonosemantics, another key notion to be dealt with in the paper, it is viewed as an agglomeration of onomatopoeia and sound symbolism; hence, phonosemantic reduplication is a specific kind of the phenomenon in question manifesting some correlation between sound and meaning. Some linguists prefer the term 'expressives' to refer to the same phenomena:

> 'Expressives constitute a special form class (or part of speech) which differs in many ways from other, more familiar form classes such as nouns, verbs, or adjectives. Most commonly, expressives are very restricted syntactically (occurring in isolation or after one of a small number of words).'
>
> (Holisky 1988: 53)

The most noteworthy fact about expressives is that they do not always observe the phonotactic patterns established for the rest of the vocabulary (e.g., a stop which never occurs initially in other words may occur initially in expressives); frequently, expressives have their own phonotactic regularities (e.g. frequently, reduplicated shape) (Emeneau 1980_1: 264). There are a number of terms pertaining to non-arbitrary relationships between sound shape and meaning in language (see, for instance, Kikvidze 2014). Judging from the aforementioned, there is a need to clearly define and distinguish these and related terms and notions; linguists, referring the term 'expressives', offer some terminological distinctions. For instance, following Diffloth (1976: 263-264), Murray Emeneau states that

> "expressives' is the most inclusive term for a form class with semantic symbolism and distinct morphosyntactic properties; 'ideophones' are a subclass in which the symbolism is phonological; 'onomatopoetics' are ideophones in which the reference of the symbolism is acoustic (i.e. imitative of sounds).'
>
> (Emeneau 1980_2: 7)

Following Voronin (1982) and Magnus (2001), we choose 'phonosemantic' and our choice is due to the fact that it incorporates all kinds of sound-meaning causal relationships.[1] However, we will maintain the notion 'expressives' as far as it can be a suitable reference for the specific cases of reduplication we are going to discuss, and, moreover, with respect to minor changes in vowels and/or consonants correlating with minor changes in meaning with particular emphasis on the fact that

> '[t]hese variations are often quite systematic, occurring across many sets of words and showing clearly that expressives are not subject to the condition of "lexical discreteness". Rather, among expressive it is often the case that incremental changes in the shape of a word (e.g., from high to mid to low vowel or from voiced to voiceless consonant) give corresponding incremental changes in the meaning (from small to medium to large, from less intense to more intense, etc.).'
>
> (Holisky 1988: 55)

Another very important point which we want to emphasize is that the focus on phonosemantics logically excludes non-phonosemantic reduplication from our scope.[2]

As it was already noted the aim of the present paper is to establish principal patterns of phonosemantic reduplication in Kartvelian languages. For the sake of the achievement of the goal, we identify three principal types (Syllable Reduplication, Root Reduplication, and Reduplication with Affixation), and, sometimes, relevant sub-types. Hence, the discussion is organized in line with the said structural patterns.

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[1] We acknowledge and appreciate the fact that it was Stanislav Voronin (1982) who introduced the said understanding of phonosemantics; however, it should also be noted that the term itself (*phono-sémantique*) appeared much earlier (Pelliot 1936).

[2] Hence, we will not consider cases of distributive reduplication (Gil 1988; Choe 1991).

2. Types of reduplication in Kartvelian languages

Reduplication in Kartvelian languages has been dealt with by a number of scholars; the most notable of them are the following: Sanikidze (1968; 1976; 1977), Topuria (1979), Datukishvili (1990), Aronia (2010), Gersamia (2015), etc. Hence, various linguists have identified various patterns of Kartvelian reduplication, such as: stem reduplication, distinguishing between modified and non-modified stems (Shanidze 1955; Sanikidze 1976; Topuria 1979); syllable reduplication, distinguishing between open and closed syllable patterns (Neisser 1953; Zhgenti 1960); total and partial reduplication (Datukishvili 1990); split and non-split reduplication, distinguished in accordance with the possibility of insertion of a linking element between a base and a reduplicant (Datukishvili 1990).

As far as the present paper is a description of Kartvelian phonosemantic reduplication patterns in terms of their both phonological and morphological parameters and with a view to structural features of the language in point, we prefer to identify the following types:

2.1. Syllable Reduplication

2.2. Root Reduplication

2.3. Reduplication with Affixation

Each of them may have several sub-types. Therefore, we organize our discussion according to the identified types and sub-types.

2.1. *Syllable reduplication*

Two kinds of syllables are doubled in most of the Kartvelian languages; hence, there are two sub-types of syllable reduplication:

2.1.1. Open syllable: (CV)[2]

Georgian	***bi:*** *bi-bi-n-i* 'waving, swaying (grass)'[3],
	pi: *pi-pi-n-i* 'twittering, rustling'
	k'a: *k'a-k'a-n-i* '(hen's, pheasant's) cackling; cackling speech; (machine-gun's) rattle'
	ka: *ka-ka-n-i* 'panting; endless talk; ranting'
	t'a: *t'a-t'a-n-i* 'scolding, remonstrations'
Megrelian	***k'i:*** *k'i-k'i-n-i* 'gazing'
	zi: *zi-zi-n-i* 'swollen; bloated (with food)'
	ži: *ži-ži-n-i* 'to get soaked'
	ǧi: *ǧi-ǧi-n-i* 'kindling; flaring (fire)'
	ši: *ši-ši-n-i* 'eating one's fill; being sated'
Laz	***č'e:*** *č'e-č'e* 'chatterbox, gossip'
	ča: *ča-ča-ra* 'blethering'
	ǧu: *o-ǧu-ǧu-l-u* 'cooing; smoldering'
	ʒi: *go-ʒi-ʒi-l-u* 'loud laughter'

Instances of open syllable doubling have not been evidenced in any of the dialects of Svan.

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[3] All translations into English are provided in accordance with Rayfield (2006) if not otherwise stated.

2.1.2. Closed syllable: (CVC)[2]

Georgian   ***bax****: bax-bax-i* 'bang; bragging'
              rak'*: rak'-rak'-i* '(water) glugging; (stream) burbling'
              čip*: čip-čip-i* 'mumbling/gabbling toothlessly'
              k'is*: k'is-k'is-i* 'peels of laughter'
              ğav*: ğav-ğav-i* 'yapping; steady barking'
Megrelian   ***xar****: xar-xal-i*[4] 'loud laughter, guffaws'
              t'an*: t'an-t'al-i* 'chattering, pratling'
              var*: var-val-i* 'heating (metal) white-hot, red-hot'
              c'ir*: c'ir-c'in-i* '(child's) cry'
              zur*: zur-zul-i* 'wailing, keening'
              par*: par-pal-i* 'rocking (of boat on sea), swaying (of grass in wind)'
Laz   ***t'ir****: t'ir-t'ir-i* 'chattering, prattling'
              par*: par-pal-i* 'butterfly'
              gur*: gur-gul-i* 'thunder'
              bar*: bar-bal-i* 'silly talk'
              dar*: dar-dal-i* 'silly behaviour'
Svan   ***ǯul****: ǯul-ǯun-Ø* '(animal's) jog-trot; (sb's) lumbering run'
              ğur*: ğur-ğun-Ø* 'roar (of rushing water); loud bubbling (of boiling water)'
              pər*: pər-pən-Ø* 'silly talk'
              bitk*: bitk-bitk-Ø* 'banging'
              čix*: č'ix-č'ix-Ø* 'crackling (of gunfire)'

2.2. Root reduplication

In terms of phonosemantic doubling, root reduplication (rather frequently, in combination with affixation) is the most productive technique in Kartvelian languages. With respect to the common pattern of the root structure in Kartvelian languages, two sub-types are identified:

2.2.1. Sub-type (CVC)[2]

Georgian   ***bax****: bax-bax-i* 'bang; bragging'
Svan   ***ğur****: ğur-ğur* 'roar (of rushing water); loud bubbling (of boiling water)'
Megrelian   ***xar****: xar-xal-i* 'loud laughter, guffaws'
Laz   ***t'ir****: t'ir-t'ir-i* 'chattering, prattling'

2.2.2. Sub-type (CV)[2]

Georgian   ***bi****: bi-bi-n-i* 'waving, swaying (grass)'
Megrelian   ***ži****: ži-ži-n-i* 'to get soaked'
Laz   ***č'e****: č'e-č'e* 'chatterbox'

In both cases, consonant clusters may develop and increase both in anlaut and auslaut positions:

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[4]   In the reduplications like ***xar****: xar-xal-i*, the dissimilation process (*xar-xar-i > *xar-xal-i*) takes place. This is a homogeneous process for all the Kartvelian languages.

Root-initial cluster (C_NVC)[2]

Georgian	***brax:*** *brax-brax-i* 'loud stamping'
Megrelian	***ǯǧir:*** *ǯǧir-ǯǧin-i* 'speaking nasally'
Svan	***č'q'wip':*** *č'q'wip'-č'q'wip'-Ø* 'snapping (thread)'

Root-final cluster (CV_N)[2]

| Georgian | ***batk:*** *batk-a-butk-i* '(guns) banging' |
| Svan | ***bitk:*** *bitk-bitk-Ø* '(guns) banging' |

In Georgian and Svan, sub-type (CVC)[2] has two realizations: Total and Partial (Ablaut). In case of total reduplication, the exact representations of a base and a reduplicant are the following:

2.2.1.(T) CVC+CVC—NOM

Georgian	***bax:*** *bax-bax-i* 'bang; bragging'
	rak': *rak'-rak'-i* '(water) glugging; (stream) burbling'
Svan	***bitk:*** *bitk-bitk* '(guns) banging'
	šk'wip: *šk'wip-šk'wip* '(noise of) beating/thrashing sb/sth (with a stick)'

In case of ablaut republication, they are:

2.2.1.(A) CV_1C+LINK+ CV_2C—NOM

Georgian	***bax***:	*bax-a-bux-i* 'swagger'
		bax-i-bux-i 'swagger'
	rak':	*rak'-a-ruk'-i* '(woodpecker) drumming'
		rak'-i-ruk'-i '(woodpecker) drumming'
Svan	***bitk***:	*bitk-i-batk(a)* '(guns) banging'
	šk'wip:	*šk'wip-i-šk'wip(a)* '(noise of) beating/thrashing sb/sth (with a stick)'

Judging from the above presented formulae, some patterns of syllable and root reduplication seem to coincide. In fact, in terms of their forms, the formulae for 2.1.1. and 2.2.1. do coincide: (CVC)[2] (Kikvidze 2018).

However, that does not imply that they are one and the same. Functionally, the bases are different (Kikvidze 2018); in 2.1.1., it is a morphological entity, that is a root, while, in 2.2.1., it is a prosodic entity, that is a syllable. Structurally, the difference is realized in the fact that, in case of 2.2.1., a base, as a root, is both doubled (2.2.1.(T) CVC+CVC—NOM) and reduplicated through vowel alternation (2.2.1.(A) CV_1C+LINK+CV_2C—NOM), while, in case of 2.1.2., a base, as a syllable, can only be doubled (copied) (CVC+CVC—NOM).

3. Reduplication with affixation

This pattern (Reduplication with Affixation) has been identified due to various reasons: 1) it is a very productive phenomenon; 2) affixes are an integral part of the reduplication process in Kartvelian languages. Three kinds of affixation processes have been noted: suffixation, circumfixation, and interfixation. We will describe each of the sub-types in turn.

3.1. Reduplication with suffixation

The formula for the suffixation pattern is the following: CV-CV+SUF—NOM.

The pattern in point has a very clear-cut feature: only open syllables occur within this formation. As for consonants, they can be all the stops and affricates (voiced, voiceless aspirate, and voiceless ejective) and fricatives (voiced and voiceless); sonorants (*m, n, r, l*) do not appear in such formations. Of the five vowels, only three of them (*a, e, i*) occur. Various scholars have observed regular correlations of consonantal features to particular shades of meaning. For instance, N. Tschanischwili (1988: 171) notes that voiced consonants correlate with 'strong, high pitch', while voiceless aspirated stops and voiceless fricatives are associated with the meanings 'weak, gentle, sensitive', and ejectives correlate with salience, stridency. With respect to these correlations, she identifies several groups of synonyms of phonosemantic reduplicative verbs:

1)   verbs referring to noise: strong (*bu-bu-n-eb-s* 'lowing, bellowing (by bull, stag, etc.)', *du-du-n-eb-s* 'murmur, mumbling', *gu-gu-n-eb-s* 'low roar, engine sound; crackling (fire)', *zu-zu-n-eb-s* 'swish, whistle (e.g. of whip, bullets); roar (of wind); rustling (of leaves), buzzing (of bees)' and weak (*si-si-n-eb-s* '(goose, wind) hissing; shushing (noisy child); saying "psst" (to get sb's attention)', *ši-ši-n-eb-s* 'soft bubbling (of sth boiling); fizzling (of damp firewood); spluttering', *xi-xi-n-eb-s* 'wheezing');

2)   verbs referring to sounding, speaking: neutral (*ka-ka-n-eb-s* '(hen's, pheasant's) cackling; cackling speech; (machine-gun's) rattle)', weak (*t'i-t'i-n-eb-s* 'burbling; drivel; twaddle', *č'i- č'i-n-i* 'whirring, rattling (of cricket, etc.); whine (of bag-pipes); fizz (of fermenting wine)', and strident (*c'u-c'u-n-eb-s* 'lamenting, wailing; (mosquito) whine', *t'a-t'a-n-eb-s* 'scolding, remonstrations', *c'i-c'i-n-eb-s* '(bird's) cheeping', *k'i-k'i-n-eb-s* 'bleating (goat)');

3)   verbs referring to singing: weak (*ği-ği-n-eb-s* 'singing quietly', *ğu-ğu-n-eb-s* 'cooing; smouldering');

4)   verbs referring to motion: weak (*bi-bi-n-eb-s* 'waving, swaying (grass)', *pi-pi-n-eb-s* 'twittering, rustling') and strident (*p'i-p'i-n-i* '(bag-pipe, chalumeau's) piping (noise)', *č'i- č'i-n-i* 'whirring, rattling (of cricket, etc.); whine (of bag-pipes); fizz (of fermenting wine)');

5)   characteristic feature: weak (*(ga)-p'i-p'i-n-eb-ul-i* 'full to the brim', *ci-ci-n-i* 'whirring, rattling (of cricket, etc.); whine (of bag-pipes); fizz (of fermenting wine)', strong (*(a)žu-žu-n-eb-s* 'make eyes (at sb)' (ibid.: 175).

As for the vowels, ***a*** is associated with neutral meaning (*ka-ka-n-eb-s* '(hen's, pheasant's) cackling; cackling speech; (machine-gun's) rattle)', *ba-ba-n-eb-s* 'shiver', *q'a-q'a-n-eb-s* 'jabbering, gaggling; croaking', *č'a- č'a-n-eb-s* 'the slightest trace', *t'a-t'a-n-eb-s* 'scolding, remonstrations'); in combination with voiced consonants, ***i*** correlates with the meaning 'little, weak' (*si-si-n-eb-s* '(goose, wind) hissing; shushing (noisy child); saying "psst" (to get sb's attention)', *t'i-t'i-n-eb-s* 'burbling; drivel; twaddle', *ši-ši-n-eb-s* 'soft bubbling (of sth boiling); fizzling (of damp firewood); spluttering', *c'i-c'i-n-eb-s* '(bird's) cheeping'); in combination with voiced consonants, ***u*** correlates with the meaning 'large, strong' (*gu-gu-n-eb-s* 'low roar, engine

sound; crackling (fire)', *bu-bu-n-eb-s* 'lowing, bellowing (by bull, stag, etc.)', *zu-zu-n-eb-s* 'swish, wistle (e.g. of whip, bullets); roar (of wind); rustling (of leaves), buzzing (of bees)') (ibid.: 175).

In the similar way, based on expressive manner-of-speak verbs in Georgian, Holisky (1988) and Holisky & Kakhadze (1988) provide the sound symbolic associations of the phonemes of Georgian: (a) Vowels: /u/ – softer, lower pitch; /i/ – high pitch, louder; /a/ and /o/ – loud, more negative (When paired with similar verb with different vowel);[5] (b) Phonation type: glottalized – higher pitch, more positive; voiceless and voiced – lower pitch, more negative; (c) Place of articulation: bilabials – soft, low pitch; velar versus uvular stops – higher versus lower pitch; velar spirants – louder, more negative (Holisky & Kakhadze 1988: 198-190). This is true for reduplicated manner-of-speaking verbs and nomina actionis in their sample. We picked reduplicatives from their list in which the authors observed their meanings (and shades of meaning):

k'is-k'is-i	it belongs to the pattern (CVC)^2; hence, it takes no affixes. Here is how they authors describe its meaning: 'laugh, of a young girl in good mood, with high pitch, silvery voice, somewhat loud, pleasant' (ibid.: 195);
rox-rox-i	(CVC)^2: 'emit loud, bumpy irregular noise, of man with loud, base, resonant voice, often talking and laughing simultaneously' (ibid.: 197);
q'a-q'a-n-i	it belongs to the pattern (CV)^2; hence, it takes on the derivational suffix -***n***: 'emit loud noises of many voices simultaneously, perhaps of a boisterous crowd, slightly derogatory (in that it implies the speakers are being too loud and impolite)' (ibid.: 197);
t'u-t'u-n-i	(CV)^2: '(colloquial) converse very softly, sweetly and indistinctly' (ibid.: 198);
k'ur-k'ul-i	(CVC)^2: '(colloquial) coo or flirt quietly, of man and woman to each other (like two doves)' (ibid.);
but'-but'-i	(CVC)^2: 'mumble softly, not particularly articulately, often to oneself' (ibid.);
du-du-n-i	(CV)^2: 'talk quietly, indistinctly, often of groups of people; noise of moving water, e.g., a wide slow river' (ibid.);
čur-čul-i	(CVC)^2: 'whisper' (ibid.);
ču-ču-n-i	(CV)^2: 'talk very softly to oneself, perhaps semi-consciously, while engages in a chore or light activity (like dusting or puttering around)' (ibid.);
si-si-n-i	(CV)^2: 'hiss quietly to someone; subject is often angry and insulting or reprimanding the indirect object; expresses very negative feelings about subject' (ibid.: 198);
zu-zu-n-i	(CV)^2: 'emit a [zzzz] sound, of wind, insects, bomb' (ibid.);
čip-čip-i	(CVC)^2: 'talk, of toothless old person (or someone imitating one)' (ibid.: 199);
luq'-luq'-i	(CVC)^2: 'talk incoherently due to some physical cause (exhausted, drunk, brain damaged from stroke) or because one is extremely unnerved and can't get words out' (ibid.);
bu-bu-n-i	(CV)^2: 'talk continuously in a monotone, low pitch voice' (ibid.: 200);

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5   It is noteworthy that "/e/ never participates in symbolism (it is not found in a single manner of speaking verb), and /o/, which is very rare, echoes /a/" (Holisky & Kakhadze 1988: 191).

žiq'-žiq'-i   (CVC)²: '"talk incoherently; sound is very unpleasant, almost animal-like, as though subject is trying to talk while about to throw up; conveys speaker's extremely negative evaluation of the speech' (ibid.);

viš-viš-i   (CVC)²: 'lament or moan (necessarily out loud, rather loudly and showing aggravation) over something which has gone wrong or which may go wrong' (ibid.: 201);

k'uč'-k'uč'-i   (CVC)²: 'laugh, of women, children, young men, softly, with high pitch, endearing' (ibid.: 202);

xit-xit-i   (CVC)²: 'laugh, with lower pitch, softer, perhaps choking a bit with laughter' (ibid.);

xar-xar-i   (CVC)²: 'laugh loudly, mostly of larger people, perhaps body is shaking with laughter (pitch is more neutral)' (ibid.: 203);

xvi-xvi-n-i   (CV)²: 'laugh, of a man in ugly, unpleasant manner, implies that he lacks social graces' (ibid.);

xi-xi-n-i   (CV)²: 'emits rasping sound […], perhaps during heavy breathing' (ibid.);

q'ič'-q'ič'-i   (CVC)²: 'higher pitch rasping, caused by a vibration of a flabby substance, e.g. flesh in throat of a fat person' (ibid.: 204);

ka-ka-n-i   (CV)²: 'non-stop talking of a woman while walking around, waving her arms, giving orders' (ibid.);

č'ik'-č'ik'-i   (CVC)²: 'animal: emit noise, of a swallow; human: talk, of small child, with lively, sweet, crisp voice, speaking in excited or happy manner; speaker has pleasant feeling toward subject' (ibid.: 205);

t'ik'-t'ik'-i   (CVC)²: 'talk actively, of a small child, with crisp, sharp voice' (ibid.);

t'i-t'i-n-i   (CV)²: 'talk, of small child, with childish, naïve, sweet, soft voice' (ibid.);

ǧu-ǧu-n-i   (CV)²: 'animal: coo, of a dove; human: emit [aaa] and [uuu], of small baby; nut talking but sweet cooing' (ibid.).

The discussed data shed light on the structural dimensions of the pattern in point. It is particularly significant to have established that suffixation is only possible whenever an open syllable, as a phonosemantic root, is reduplicated: (CVC)²; specifically, CV-CV-*n*[6]-*i*. Besides, no derivational suffix can be taken on by a closed syllable as a phonosemantic root; hence, *CVC-CVC+SUF—NOM is not possible.

3.2. Reduplication with circumfixation

The formula for the circumfixation pattern is the following: INF<CVC>INF

Laz is the only Kartvelian language to exemplify reduplication with circumfixation (o- -u):

Table 1: *Laz circumfixated reduplication*

Simplex	Reduplicative	Translation
t'ar	*o-t'ar-t'al-u*	'to chatter'
č'ir	*o-č'ir- č'il-u*	'lamenting, wailing; (insect) whine'
kir	*o-kir-kin-u*	'peels of laughter'
xar	*o-xar-xal-u*	'loud laughter, guffaws'
dar	*o-dar-dal-u*	'silly talk'

It should necessarily be noted that circumfixation is not an exclusive mechanism for phonosemantic reduplication in Laz; by means of the circumfixated formation, the language strives to fit phonosemantic reduplication into the pattern characteristic of regular masdars.

Irrespective of the fact that this sub-pattern (Reduplication with Circumfixation) occurs only in Laz, structurally it is quite typical of the Kartvelian languages at large.

3.3. *Reduplication with interfixation*

The formula for this pattern (Reduplication with Interfixation) is the following: CV$_1$C+LINK+CV$_2$C—NOM

Of all the Kartvelian languages, Georgian has the most clear-cut system of interfixated phonosemantic reduplication. It should be noted that this pattern is necessarily accompanied by vowel alternation in reduplicants as it is reflected in the formula. More specifically, the alternation is as follows: *a-u*. Hence, the formula can be specified as 3.3.1. C*a*C+*a/i*+C*u*C—NOM. It was the Georgian linguist Parnaoz Ertelishvili who identified them as an individual type of reduplicatives in Georgian:

> 'The stems are an outcome of root reduplication; in an initial syllable of the root, there is the vowel *a*, while, in the final one, there is the *u*. simple root are connected by means of the interfixal vowels *a* and *i*; the *a* is more frequent. Parallel variants of stems, with respect to interfixal vowels, have been attested.'
>
> (Ertelishvili 1978: 70)

Individual varieties of the above presented formula are the following:

3.3.1. CV$_1$C+LINK+CV$_2$C—NOM, specifically C*a*C+*a/i*+C*u*C—NOM

bax: *bax-a-bux-i* 'bang; bragging'

3.3.2. CCV$_1$C+LINK+CCV$_2$C—NOM, specifically CC*a*C+*a/i*+CC*u*C—NOM

čxar: *čxar-a-čxur-i* 'loud constant jangling (metal, glasses)'

3.3.3. CCCV$_1$C+LINK+CCCV$_2$C—NOM, specifically CCC*a*C+*a/i*+CCC*u*C—NOM

txlaš: *txlaš-a-txluš-i* 'a series of slaps; slopping (of feet in mud); stamping, clopping (of feet, hooves)'

3.3.4. CV₁CC+LINK+CV₂CC—NOM, specifically C*a*CC+*a/i*+C*u*CC—NOM

rac'k': rac'k'-a- ruc'k' 'tinkling, jingling'

He estimates up to 120 interfixal reduplicatives in Georgian (Ertelishvili 1970: 78).
With respect to the two vowel interfixes, illustrations of parallel variants are the following:

Table 2: *Georgian interfixated reduplication*

Simplex	Interfix -*a*	Interfix –*i*	Translation
t'ak'	*t'ak'-a-t'uk'-i*	*t'ak'-i-t'uk'-i*	'tick-tock, tick-tocking'
č'ax	*č'ax-a-č'ux-i*	*č'ax-i-č'ux-i*	'crackling (of gunfire)'
č'a č'q'	*č'a č'q'-a-č'u č'q'-i*	*č'a č'q'-i-č'u č'q'-i*	'squelching (of feet in bog)'
p'ak'	*p'ak'-a-p'uk'-i*	*p'ak'-i-p'uk'-i*	'patter, clack, clatter (of feet, heels, hooves)'
sxap'	*sxap'-a-sxup'-i*	*sxap'-i-sxup'-i*	'gabbling'
partx	*partx-a-purtx-i*	*partx-i-purtx-i*	'fluttering, flapping (of wings)'

Concerning such reduplicatives, there is a distinct approach according to which "interfixated compounding does not occur in Georgian" (Datukishvili 1990: 44). She views the above mentioned reduplicatives as coordinating compounds the components of which (a base and a reduplicant) can be conjoined by means of the conjunction *da* 'and' (ibid.: 42). Therefore, not roots but rather stems are reduplicated. Hence, the *a* and *i*, having been presented as interfixal vowels, are conceived as an integral part of a base (*a*: *baxa-, t'a'k'a-, č'axa-, č'a č'q'a-, rak'a-, p'aka-, sxap'a-, partxa-; i: baxi-, t'a'k'i-, č'axi-, č'a č'q'i-, rak'i-, p'aki-, sxap'i-, partxi-*). Thus, the reduplicatives will be glossed not as it was presented in Table 1, but in a rather different way, as it is in the following: ***bax***: *baxa-bux- // baxi-bux-*; ***t'ak'***: *t'ak'a-t'uk'- // t'ak'i-t'uk'-*; ***č'ax:*** *č'axa-č'ux- // č'axi-č'ux-*; ***č'a č'q':*** *č'a č'q'a-č'u č'q'- // č'a č'q'i-č'u č'q'-*; ***rak':*** *rak'a-ruk'- // rak'i-ruk'-*; ***p'ak':*** *p'ak'a-p'uk'- // p'ak'i-p'uk'-*; ***sxap':*** *sxap'a-sxup'- // sxap'i-sxup'-*; ***partx:*** *partxa-purtx- // partxi-purtx-*.

The author's argumentation is based upon the diachronic data:

'Onomatopoeic syllables took on the word-formation suffix -*a*, resulting in nouns for noise: *lac'- > *lac'-a, brax- > *brax-a, t'k'ac- > *t'k'ac-a*, which later were reduplicated… Reduplication and vowel alternation should have occurred simultaneously.'

(ibid.: 44)

The contradicting approaches can be represented in the following way:

Table 3: *Interfixated or not?*

		Variant with the Vowel –*i*	Variant with the Vowel –*a*
(1)		batk-i-butk-i	batk-a-butk-i
		batk-SG.NOM-butk-SG.NOM	batk-DER-butk-SG.NOM
(2)		batk-i-butk-i	batk-a-butk-i
		batk-LINK-butk-SG.NOM	batk-LINK-butk-SG.NOM
(3)		batki-butk-i	batka-butk-i
		batki-butk-SG.NOM	batka-butk-SG.NOM

With respect to the aforementioned, the principal question to be asked is about the status of the base: is it a stem or a root? If it is conceived of as a root (Ertelishvili 1970), the inter-radical vowels *a* and *i* are interfixes; if it is considered to be a stem (Datukishvili 1990), then the vowels in question are not interfixes but rather are assumed as an integral part of a stem structure.

Normally, such questions can be more easily answered with respect to data from sister languages. Therefore, we have to see what the situation is in Svan, Megrelian and Laz in order to find out whether similar patterns occur in them, and how the attested patterns correlate in terms of their structural and semantic properties.

Varlam Topuria (1979: 118) names only two examples for Megrelian: *k'iru-k'aru* 'ritual cake' and *zik'u-zak'u* 'a swing'. Later, some more illustrations were drawn in the scholarly literature: *čim[u]- čamu* 'tiny noise', *piču-paču* 'sluggish', *t'iru-t'aru* 'to chatter', *p'int'i-p'ant'u* 'various tiny, small things' (Aronia 2010: 42), *xiru-xaru* 'heap of junk, old rubbish' (Kiria et al. 2015: 225).

Similarly to Megrelian, Laz data evidence only a few examples: *č'ak'a-c'uk'a* 'of all colours', *bric'u-brac'u* 'ripping (sound)', *mč'ipe-mč'upe* '(a lot of) tiny, small things' (Aronia 2010: 44), *baga-buga* 'pounding, thumping (of a heart)', *ğala-ğula* 'untidy', *ğač'a- ğuč'u* 'everyone talking at a time', *c'ak'ara-c'uk'uru* 'anything at hand', *xvit'i-xvat'a* 'mottled' (Tandilava 2013: 46, 808-809, 850, 882).

Another Kartvelian language Svan seems to display an abounding number of reduplicatives of the pattern in question;[7] we are providing some of its typical illustrations in the following table:

Table 4: Svan interfixated reduplication

Simplex	Reduplicative	Translation
t'q'ig	*t'q'ig-i-t'q'aga*	'loitering, roaming about'
bitk	*bitk-i-bätka*	'(guns) banging'
bič'k'w	*bič'k'w-i-bäč'k'wa*	'(noise) of crackin'
p'ilt'	*p'ilt'-i-p'alt'a*	'(a child's or an adult thin woman's) unintelligible talk'
šk'wip	*šk'wip-i- šk'wapa*	'(noise of) beating/thrashing sb/sth (with a stick)'
riq'	*riq'-i-räq'a // riq'-i-raq'a*	'crashing, banging'

It should necessarily be noted that the Lashkh and Cholur varieties (sub-dialects) of Svan have the following forms: *bili-bulu* 'stammer', *biri-buru* 'silly talk', *p'iri-p'uru // k'ir-i-k'uru* 'silly, rapid, endless talk', *p'ic'i-p'uc'u* '(a pampered girl's) talk with changed, high pitch voice', *pirpi-purpu* 'slurring (speech defect)', *piči- puču* 'whisper', *picki-pucku* 'pampered girl'.[8]

The patterns of ablaut-motivated reduplication in Kartvelian languages are rendered in the following table:

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[7] It is noteworthy that they appear in all of its dialects; this is a significant factor as far as dialects of Svan are not always uniform in terms of representation of various linguistic phenomena.

[8] All of the Svan examples were elicited within the framework of the above mentioned project and kindly provided by our colleague and collaborator within the project Dr. Medea Sagliani. She also dealt with the problem in question in one of her recently published papers (Sagliani 2015).

Table 5: *Ablaut-motivated reduplication in Kartvelian languages*

Georgian	a-u	a-a-u-*i	batk-a-butk-i	k'nac'-a-k'nuc'-i	rak'-a-ruk'i	p'ak'-a-p'uk'i	čax-a-čux-i
		a-i-u-*i	batk-i-butk-i	k'nac'-a-k'nuc'-i	rak'-i-ruk'i	p'ak'-i-p'uk'i	čax-i-čux-i
Megrelian	i-a	i-u-a-u	zik'u-zak'u	k'iru-k'aru	t'iru-t'aru	p'it'[u]-p'at'u	piču-paču
Laz	a-u	a-a-u-a	č'ak'a-č'uk'a	k'rank-k'runk			
	i-a	i-u-a-u	bric'u-brac'u				
Svan	i-a	i-i-a/ä-a	bitk-i-b ätka	riq'-i-r äq'a	č'ipx-i- č'apxa	t'q'ig-i-t'q'aga	p'ilt-i-p'alt'a
	i-u	i-i-u-u	bir-i-buru	p'ir-i-p'uru	p'ic'-i-p'uc'u	p'ič-i-p'uču	

As it is seen, vowel alternations are not the same in all the Kartvelian languages. Therefore, it can be questioned that Megrelian and Laz patterns have something in common with those of Georgian and Svan.

In Megrelian, both the base and the reduplicant end in -*u*. It should be noted that both -*u*'s are frequently truncated, and this can be explained in terms of the rule of narrowing of the vowels *u* and *i*, which is characteristic of Megrelian: *i/u>ə>Ø*: *čim-čamu < čimu-čamu, p'it' p'at'u < p'it'u-p'at'u, t'ir-t'aru < t'iru-t'aru*, etc. (Kartozia et al. 2010: 480). The segments (base and reduplicant) with the -*u* refer to the immediate repetition of two completed actions with a changing direction of motion, that is, each constituent has an implication of finiteness, whereas, whenever they occur without the -*u*, and with either a schwa or a zero, the same meaning is rendered by reduplicatives: *čim-čam* (*u/ə/Ø*), *p'it'-p'at'* (*u/ə/Ø*), *t'ir-t'ar* (*u/ə/Ø*), etc. This specific pattern of Megrelian is similar to those in other Kartvelian languages (we mean reduplication with vowel alternation though without an interfix); cf.:

Svan: *biri-buru* 'silly talk'; *p'iri-p'uru // k'iri-k'uru* 'silly, rapid, endless talk'; *p'ic'i-p'uc'u* '(a pampered girl's) talk with changed, high pitch voice'; *pirpi-purpu* 'slurring (speech defect)'; *piči-puču* 'whisper'; *picki-pucku* 'pampered girl'

Georgian: *peri-puri* "'facial colour'; *k'aba-k'uba* 'oman's clothing, dressing'; *c'aǧa-c'uǧa* 'ankle-length boot/shoe'; *xara-xura* 'junk, old rubbish'; *parča-purča* 'silks'; *č'rela-črula* 'of all colours'; *č'ia-č'ua* 'worms, maggots'

Laz: *bric'u-brac'u* 'ripping (sound)'; *ǧač'a-ǧuč'u* 'everyone talking at a time'; *c'ak'ara-c'uk'uru* 'anything at hand'; *q'vili-q'vala* 'bone'; *xvit'i-xvat'a* 'mottled'; *kčini-kčvani*'old-old'; *mč'ipe-mč'upe* '(a lot of) tiny, small things'; *ǧala- ǧula* 'untidy'; *č'ak'a-č'uk'a* 'mottled'; *bara-bura* 'potato'

The Megrelian (k'iru-k'aru, zik'u-zak'u, čim[u]- čamu, piču-paču, t'iru-t'aru, p'int'i-p'ant'u, xiru-xaru) and Svan (biri-buru, p'iri-p'uru // k'iri-k'uru, p'ic'i-p'uc'u, pirpi-purpu, piči-puču, picki-pucku) phonosemantic reduplicatives belong to the pattern (CVCV)[2]; specifically, Megrelian: $CV_1CV_2+CV_3CV_2 = CiCuCaCu$;[9] Svan: $CV_1CV_1+CV_2CV_2 = CiCiCuCu$. The rest of the items are not phonosemantic ones. The same can be stated about the Georgian list (peri-puri, k'aba-k'uba, c'aǧa-c'uǧa, xara-xura, parča-purča, č'rela-črula, č'ia-č'ua); they belong either to a noun or an adjective class, none of them being phonosemantic. The coda vowels are also different; the reduplicative-internal **i** and **u** should not be identified as functional entities. Hence, in the Megrelian examples, the internal **u/ə** should not be regarded to be an interfix similar to the Georgian **a** and **i** and the Svan **i**. Therefore, the occurrence of

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[9]   The Laz *bric'u-brac'u* corresponds to the same pattern.

phonosemantic reduplication with interfixation should be recognized only in Georgian and Svan. Their common structure can be represented by the following formula: CVC-V-CVC.[10] Hence, both a base and a reduplicant can only be closed syllables (CVC). Georgian interfixated reduplicatives take on a nominative case marker -**i** (CVC-V-CVC- **i**), while those of Svan have the -**Ø** (CVC-V-CVC-**Ø**); the Svan final -**a** is attested only in poetic texts. It should also be noted that not all the **a**-interfixated reduplicatives have their **i**-interfixated counterparts; the latter are much fewer.

4. Conclusions

In the present paper, we attempted to scrutinize and detect whether and how the above mentioned patterns are valid for all the four Kartvelian languages and to draw inferences about occurring formal and/or functional regularities associated with phonosemantic reduplication.

It has been established that, with respect to the peculiarities in the languages in point, the most characteristic patterns of phonosemantic reduplication are Syllable Reduplication, Root Reduplication, and Reduplication with Affixation. Templatic similarities between some patterns of syllable reduplication and root reduplication were clarified highlighting structural and functional differences. In fact, the interplay of prosodic and morphological inventories is well demonstrated in the description of reduplication processes. In case of total $(CVC)^2$ reduplication, a template prosodic entity [CVC] is copied: [CVC-CVC]. As a result of the grammaticalization process, an onomatopoeic syllable turns into a root/stem. The resulting construction takes on a case marker: CVC-CVC-NOM (Georgian: CVC-CVC-**i**; Svan: CVC-CVC-**Ø**). Besides, the process is much more complicated in case of ablaut reduplication when a base is reduplicated through vowel alternation; a base and a reduplicant are conjoined by means of an interfix (**a** or **i**): *bax-a-bux-i // bax-i-bux-i*. More specifically, the process in point involves several stages: 1) a syllable template is fully reduplicated and linked to its C/V slots (C**a**C> C**a**C-C**a**C: ***bax***>*bax-bax*); 2) an ablaut-motivated vowel change occurs from /**a**/ to /**u**/ for the reduplicant (C**a**C-C**a**C> C**a**C-C**u**C: *bax-bax>bax-bux*); 3) interfixation as construction (compound) marking (C**a**C-LINK-C**u**C-NOM: *bax-a-bux-i* or *bax-i-bux-i*).

The described patterns of phonosemantic reduplication demonstrate common constraints of the grammaticalization/phonotactics interface in Kartvelian languages. With respect to both the inventory and the structural and functional features, it is obvious that phonosemantic reduplication in Kartvelian languages is a very clear-cut **morphonological** phenomenon.

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[10] A base (CVC) of the CVC-V-CVC pattern is a productive element as a free form, taking on the verbal suffixes (-**un** or -**an**); meanwhile finite verbs can never be derived from the reduplicatives themselves (CVC-V-CVC) (Kobalava 1980: 71).

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