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ICGL13

13th International Conference
on Greek Linguistics

7–9th September 2017

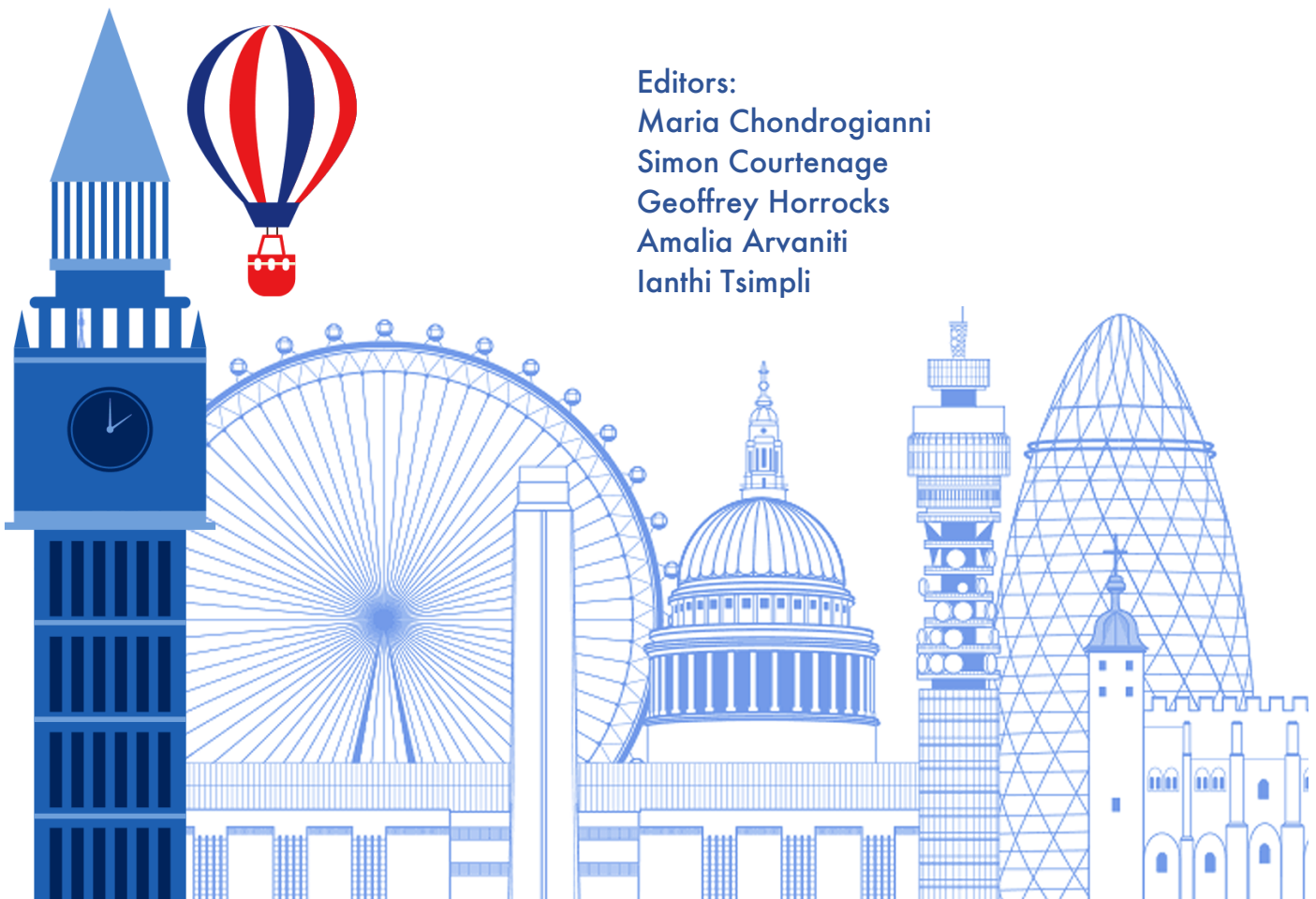
University of Westminster
115 New Cavendish Street
London, W1W 6UW



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PROCEEDINGS

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PROCEEDINGS OF THE 13TH INTERNATIONAL
CONFERENCE ON GREEK LINGUISTICS

ΠΡΑΚΤΙΚΑ 13ΟΥ ΣΥΝΕΔΡΙΟΥ ΕΛΛΗΝΙΚΗΣ
ΓΛΩΣΣΟΛΟΓΙΑΣ

Maria Chondrogianni, Simon Courtenage, Geoffrey Horrocks, Amalia Arvaniti,
Ianthi Tsimpli (Eds.)

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Number in Pontic Greek spoken in Georgia

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ABSTRACT

Το άρθρο αυτό παρουσιάζει μια εμπειρική μελέτη για τη γραμματική κατηγορία του αριθμού στα Ποντιακά που ομιλούνται από την Ποντιακή κοινότητα της Γεωργίας. Εστιάζει την προσοχή περισσότερο στο σχηματισμό του ονοματικού μονήματος «πληθυντικός» και στην απόδειξή του μέσω του μορφολογικού αναλυτή (Morphological Analyser), που δημιουργήθηκε με βάση Finite State Technology για το ονοματικό σύστημα της Ποντιακής και περιλαμβάνει κανόνες σχετικές με την κλίση και το σχηματισμό του πληθυντικού αριθμού. Η εφαρμογή δημιουργήθηκε από την Ι. Λομπζανίτζε και βασίζεται στις πληροφορίες για τα Ποντιακά της Γεωργίας, όπως αυτά αποδεικνύονται στο έργο της Σ. Μπερικασβίλι *Μορφολογική ανάλυση της Ποντιακής της Γεωργίας*.

Η μελέτη βασίζεται σε σώμα προφορικού λόγου, συγκεντρωμένο με επιτόπια έρευνα, σε διαφορετικές χρονικές περιόδους, στην Ποντιακή κοινότητα της Γεωργίας (όσο στη Γεωργία, τόσο και στην Ελλάδα). Οι καταγραφές πραγματοποιήθηκαν από τους Ε. Κοτανίδη, Σ. Μπερικασβίλι και Σ. Σκοπετέα στα πλαίσια του ερευνητικού προγράμματος *Η επίδραση των τρεχούμενων μετασχηματιστικών διαδικασιών στη γλώσσα και την εθνική ταυτότητα, η περίπτωση των Ελλήνων: Ουρούμ και Πόντιων της Γεωργίας*, στο Πανεπιστήμιο του Μπίλεφελντ της Γερμανίας. Ολόκληρο το υλικό με interlinear glosses είναι διαθέσιμο από το γλωσσικό αρχείο TLA, Max Planck Institute.

Στην παρούσα έρευνα εξετάζεται: (α) δήλωση της γραμματικής κατηγορίας του αριθμού στα ονόματα και ονοματικές φράσεις, με ιδιαίτερη εμφάση στο συγκρητισμό της ονομαστικής με την αιτιατική και μεταπλασμό του γένους στον πληθυντικό αριθμό, (β) συμφωνία στον αριθμό στην ονοματική φράση που εξαρτάται όχι μόνο από την κατηγορία του γένους, αλλά και από τη σημασιολογική διάκριση σε άψυχα και έμψυχα (ανθρώπινα και μη-ανθρώπινα) ουσιαστικά, (γ) ιδιαίτερο σχηματιστικό στοιχείο πληθυντικού: -αντ της Ποντιακής, (δ) ένδειξη του πληθυντικού σε ονόματα όταν ο αριθμός ή ποσότητα εκφράζεται με τη βοήθεια αριθμητικών ονομάτων, καθώς και (ε) δήλωση του πληθυντικού στις δάνειες λέξεις που είναι ενσωματωμένες στο κλιτικό σύστημα της Ποντιακής από διάφορες δότριες γλώσσες (Τουρκικά, Ρωσικά, Γεωργιανά).

Key Words: Number, Pontic Greek, Morphological Analyser.

1. INTRODUCTION

The aim of the paper is to present the data in domain of grammatical number of an understudied endangered variety of Pontic Greek (PNT), as currently spoken by Pontic-speaking community of Georgia. The research is based on the Pontic Dialectal Corpus compiled in 2013 - 2016 at Bielefeld University within the framework of the project: *The impact of current transformational processes on language and ethnic identity: Urum and Pontic Greeks in Georgia*, funded by the Volkswagen Foundation. The corpus includes 435 media files of spontaneous and semi-spontaneous speech recorded in Georgia and Greece. In whole 57 native-speaking informants have been recorded, the average word count per speaker is 935 words, approximately the whole corpus contains 53 295 words. Data were collected during different fieldwork periods (2005, 2014-2016) in Pontic speaking community of Georgia by Stavros Skopeteas, Evgenia Kotanidi and Svetlana Berikashvili. All the data have been glossed by Svetlana Berikashvili and are available via the TLA archive of the Max Planck Institute for Psycholinguistics (Nijmegen, Netherlands)¹ to the research community.

The discussed topics on grammatical number cover such issues as: a) number values and the forms of marking the number, including different inflectional classes (IC) and marking of the noun

¹ Corpus resource: TLA, Donated Corpora, XTYP Lab available at <https://tla.mpi.nl/resources/data-archive/>

phrase (NP); b) the cases of case syncretism and the alteration of the gender in plural, based on animacy distinction; c) existence of peculiar PNT number formatives, like collective suffix *-and*; d) agreement in number in noun phrases; as well as e) marking the number in loan nouns integrated into the inflectional system of PNT from different Source Languages (SL), namely, Turkish, Russian and Georgian. On the results of the conducted research the morphological analyser based on Finite state approach², especially, its nominal paradigm with so called closed classes has been developed by Irina Lobzhanidze for Pontic Greek as spoken by Pontic-speaking community of Georgia.

The paper is structured as follows: Section 1 is an introductory part. Section 2 discusses number values and marking the number in noun. It includes 2 sub-sections for realization of grammatical number in native and borrowed nouns. Section 3 provides discussion on marking the NP for number, while Section 4 analyses issues concerning the computational processing of PNT data with regards to the realization of grammatical number in nouns. Section 5 summarizes the main findings and the outcomes of the implemented research.

2. MARKING THE NUMBER IN NOUNS

In PNT as spoken in Georgia, number is a nominal category, as in most Indo-European languages (see Corbett 2001: 816–817 for nominal and verbal number, and Corbett 2000: 243–264 for more extensive discussion on verbal number). Number is marked on the verb as well, but it is nominal number which is expressed on the verb, and not a verbal one, as it indicates the number of subjects and not the number of events. Subsequently, it is expressed by agreement with subject noun phrase. The opposition of number values is singular and plural. Despite the fact that PNT is known for the conservative traits and the preservation of several properties of Ancient and Medieval Greek, it has not retained the dual number value, which was characteristic to Ancient Greek (AG). Thus, number values of Pontic are the same as in Standard Modern Greek (SMG).

2.1 Marking the number in native nouns

Plural number is morphologically marked on nouns in PNT. The inflectional classes for Pontic nouns can be defined in the same way as for SMG. They are based on two principles: (a) systematic diversity of allomorphic stems and (b) different inflectional formatives, proposed by Ralli (2000: 201–228, 2012: 118–122) for SMG declension classification. In Pontic the main difference is the existence of inflectionally active animacy category, which causes the further division of classes in two sub-classes one for animate [+human] and another for animate [-human] and inanimate nouns. Thus, the first three classes: IC1, IC2 and IC3, which include masculine (IC1 *-os*, IC2 *-as*, *-is*, *-es*, *-us*) and feminine (IC3 *-i*, *-a*, *-e*, *-u*) nouns are subdivided to two sub-classes based on the animacy distinction. IC4 includes feminine inanimate nouns ending in *-i*, *-si*, *-ksi*, *-psi*, while the last four classes: IC5, IC6, IC7 and IC8 have neuter nouns with the endings *-on*, *-ion*; *-in*; *-os*; *-man*, *-(s)imon* and *-s* respectively. Comparing two systems, the peculiarities of inflectional classes in PNT spoken in Georgia are as follows: (a) some different phonological realization of inflectional formatives, (b) syncretism of the core grammatical cases in plural, (c) inflectionally active animacy category and (d) neuterization of gender in plural characteristic to some nouns (Berikashvili 2017: 36-37).

The plural formation in all these classes differs in inflection and stem formation. Generally, as it is observed in other languages “these two devices, inflection and stem formation may occur separately or together” (Corbett 2001: 827). In PNT as spoken in Georgia the number marking in nouns reflects binary distinction, namely (a) in a subset of nouns inflectional markers are added directly to the basic inflectional stem (IC1, IC5, IC6 and IC7), i.e. inflection occurs separately, while (b) in a subset of nouns inflectional markers are added to allomorphic stems (IC2, IC3, IC4 and IC8), inflection occurs together with the stem formation. Thus showing that two different patterns coexist in PNT.

With regards to the stem formations, the possibilities in Pontic are as follows:

- (a) Both stems for singular and plural equal to the basic inflectional stem (IC1, IC5, IC6 and IC7);
- (b) Basic inflectional stem for plural, stem with additional vowel for singular, cf. allomorphic stems *martira* – *martir* ‘witness’ (IC2, IC3 and IC4);

² Finite State Tools, *xfst* and *lexc* available at <https://web.stanford.edu/~laurik/.book2software/>

- (c) Basic inflectional stem for singular, stem with *-ð-* epenthesis for plural, realized as *-að-*, *-ið-*, *-uð-*, for instance allomorphic stems: *maθiti – maθitað* ‘pupil’ (IC2, IC3);
- (d) Basic inflectional stem for singular, stem with final *-t* for plural, and SG.GEN, cf. allomorphic stems: *loman – lomat* ‘clothes’ (IC8).

It should be mentioned also that inflections are sensitive to number, there are different formatives for singular and plural. The formatives of plural marking according to inflectional classes reflect the following scheme, see Table 1:

Table 1 Plural markers in nouns

	IC1, IC2 [+human]	IC1 [-human], inanimate
NOM	<i>-i</i>	<i>-us</i>
GEN	<i>-(i)on</i>	<i>-on</i>
ACC	<i>-us</i>	<i>-us</i>

	IC4, inanimate
NOM	<i>-is</i>
GEN	<i>-(i)on</i>
ACC	<i>-is</i>

	IC5, IC8	IC6, IC7
NOM	<i>-a</i>	<i>-ia / -ã</i>
GEN	<i>-(i)on</i>	<i>-(i)on</i>
ACC	<i>-a</i>	<i>-ia / -ã</i>

As it can be observed from plural formatives, it is often difficult and in some cases even impossible to deduce the inflectional class of a given word by its plural form (see for the same situation in other PNT variety Janse 2002: 216). The plural formation is also complicated by the inflectionally active animacy distinction of nouns, which triggers case syncretism in plural. It applies to all animate [-human] and inanimate nouns of masculine and feminine gender, see Table 2:

Table 2 Case syncretism of [-human] and inanimate nouns in PL

		M.		F.
	<i>-os</i>	<i>-as</i>	<i>-i</i>	<i>-a</i>
NOM	<i>yámus</i> ‘marriage’	<i>mínas</i> ‘month’	<i>vreshás</i> ‘rain’	<i>kosáras</i> ‘hen’
ACC	<i>yámus</i>	<i>mínas</i>	<i>vreshás</i>	<i>kosáras</i>

Whereas in the corresponding [+human] nouns in masculine gender there are different formatives for nominative and accusative, while those of feminine gender have formative *-es* for both core cases, see (3)

Table 3 Case syncretism of [+human] nouns in PL³

		M.		F.
	<i>-os</i>	<i>-as</i>	<i>-i</i>	<i>-a</i>
NOM	<i>ánthropi</i> ‘person’	<i>ándres</i> ‘man’	<i>aðelfáðes</i> ‘sister’	<i>θäatéres</i> ‘daughter’
ACC	<i>antrópus</i>	<i>ándras</i>	<i>aðelfáðes</i>	<i>θäatéres</i>

As it can be observed case syncretism in feminine nouns is distinguished by the use of formatives, *-es* (initial formative of nominative case) is used with human nouns, and *-as* (initial formative of accusative case) with non-human ones.

One peculiar plural marker characteristic only to PNT is *-and*, which according to different opinions (see Papadopoulos 1955: 48–49, Tombaidis 1988: 46–47, Revithiadou and Spyropoulos 2012: 60–62), is (a) an unmarked expression of plurality, (b) has a negative connotation, (c) is a

³ Tables 2 and 3 adapted from Berikashvili (2017: 35-36).

collective affix. In Pontic Greek as spoken in Georgia this suffix mostly has a collective meaning and is associated with animate entities, more frequently with the masculine, see (1)

(1)	<i>érxundan</i>	<i>i</i>	<i>turkánd</i>
	come:PRS./IPFV.PST.3.PL	DEF:M./F.PL.NOM	Turk:M.PL.NGEN
	'Turks are/were coming'.		

[Berikashvili 2016: PNT-TRA-SN-00000-B25]

Plural formation is also complicated by the fact, that “some masculine or feminine words referring to non-humans have a neuter plural” (Janse 2002: 216), something that is observed in all Pontic varieties and shall be discussed below (see section 4).

2.2 Marking the number in loan-nouns

Pontic Greek spoken in Georgia is known for conduct-induced changes, as it always have been in different multilingual environment. On the initial stage (19th century) when one can talk about original settlements in Georgia, Pontic Greeks were mostly bilingual in Russian, in the 20th century, during the internal migration to the urban centres, the influence of Georgian is evident (though not on the level of the bilingualism). After the emigration to Greece (beginning from the 90ies, 20th century) the significant impact is also that from SG and Pontic multidialectal environment. Besides it preserves a lot of Turkish borrowings and constructions which come from the diachronic stage and are already integrated into the understudied variety of PNT.

The interesting issue is what happens with loan-nouns while forming plural. Generally, PNT as spoken in Georgia has a tendency to integrate loan words into patterns of the Recipient Language (RL) (for the integration of loan words into the patterns of Pontic see Berikashvili 2016: 255–276). Assignment to the inflectional class is dependent also upon a phonological form of the loan's ending. The most productive inflectional classes are IC6 for neuters and IC3 for feminines, masculine nouns are rarely borrowed those that are denote mostly human entities and are distributed among IC2 (more frequent option for Turkish loans) and IC1 (more frequent option for Russian loans) (for the assignment of loan words to inflectional classes consult Berikashvili 2017: 110-111).

The point of interest is the plural formation in loans, are they fully integrated into the patterns of the RL or are there some additional constraints involved. The criteria for the integration of the loans in plural formation can be defined as follows: (a) the use of the same formatives as for the native words, (b) following the same patterns of the IC, (c) neuterization of the gender and (d) case syncretism of the core grammatical cases. See Table 4, 5 and 6 for the instances of loan nouns attested in plural in the corpus:

Table 4 Loan nouns of Russian origin attested in PL

Attested form in PL	IC	Attested form in PL	IC
<i>abicha</i> 'custom' (select. borrowing)	IC6	<i>padruges, padrukaðes</i> 'friend'	IC3
<i>atnashenias</i> 'relation'	IC3	<i>pakryshkas</i> 'tyre'	IC3
<i>balonia</i> 'tank'	IC6	<i>pensianer</i> 'pensioner' (select. borr.)	IC1 or IC2
<i>barashkas</i> 'lamb'	IC3	<i>poxoronia, poxoronja</i> 'funerals'	IC6
<i>bileta</i> 'ticket'	IC5	<i>prablemas</i> 'problem'	IC3
<i>bulionä</i> 'bouillon'	IC6	<i>pratsenta</i> 'percent'	IC5
<i>chashkas</i> 'cup'	IC3	<i>praznika, praznikä</i> 'fest'	IC5, IC6
<i>diplomä</i> 'diploma'	IC6	<i>prikazia</i> 'order'	IC6
<i>elementä</i> 'element'	IC6	<i>prirodas</i> 'nature'	IC3
<i>evroremontä</i> 'euro-repairs'	IC6	<i>radiona</i> 'radio'	IC5
<i>famílias</i> 'surname'	IC3	<i>restorania, restarania</i> 'restaurant'	IC6
<i>fruktä</i> 'fruits' (select. borrowing)	IC6	<i>salfetkas</i> 'napkin'	IC3
<i>gazetä</i> 'newspaper'	IC6	<i>semiaðas</i> 'family'	IC3
<i>ÿarmonia, karmonia</i> 'accordion'	IC6	<i>shashlykia</i> 'shish kebab'	IC6
<i>kafetas, kafetopa</i> .DIM 'candy'	IC3, IC5DIM	<i>silyotkas</i> 'herring'	IC3
<i>kambanias</i> 'company'	IC3	<i>sménas</i> 'shift'	IC3
<i>kantsertä</i> 'concert'	IC6	<i>stishókia</i> .DIM 'poem'	IC6
<i>kartofä, kartofia</i> 'potato'	IC6	<i>stolä, stolä</i> 'table'	IC6

<i>kerasinkas</i> 'oil stove'	IC3	<i>sutkas</i> 'day and night'	IC3
<i>kilometra</i> 'kilometer'	IC5	<i>tradítsias</i> 'tradition'	IC3
<i>klasia</i> 'class'	IC6	<i>tsitrusä</i> 'citrus' (selective borrowing)	IC6
<i>kultures</i> 'culture'	IC3	<i>tunelia</i> 'tunnel'	IC6
<i>kursä</i> 'course'	IC6	<i>udopstvas</i> 'comfort'	IC3
<i>maskas</i> 'mask'	IC3	<i>votkas</i> 'vodka'	IC3
<i>muzikas</i> 'music'	IC3	<i>visilkas</i> 'deportation'	IC3
<i>muzikants, muzikandas</i> 'musician'	IC1	<i>yolkas</i> 'Christmas tree'	IC3
<i>natsionalnostia</i> 'nationality'	IC6	<i>zelenia</i> 'green'	IC6
<i>natsias</i> 'nation'	IC3	<i>zhertvas</i> 'sacrifice'	IC3

Table 5 Loan nouns of Turkish origin attested in PL

Attested form in PL	IC	Attested form in PL	IC
<i>adatä, adatia</i> 'tradition'	IC6	<i>karaúlia, yaraúlia</i> 'guard'	IC6
<i>axulia</i> 'mind'	IC6	<i>mesháðas, meshánaðas, mesháðes</i> 'forest'	IC3
<i>axuliðes</i> 'clever'	IC2	<i>mejvaðas</i> 'fruit'	IC3
<i>bríndzha</i> 'rice'	IC6	<i>mezäðas</i> 'food'	IC3
<i>chairä, chairia</i> 'pasture'	IC6	<i>ormania</i> 'forest'	IC6
<i>chántas, tsantas</i> 'bag'	IC3	<i>pachiðes</i> 'sister'	IC3
<i>chichäkia</i> 'flower'	IC6	<i>paraðas</i> 'money'	IC3
<i>chixritas</i> 'dragonfly'	IC3	<i>peshkiria</i> 'towel'	IC6
<i>chochuya</i> 'child'	IC5	<i>tartania</i> 'hole'	IC6
<i>chumbushia</i> 'humorous rhyme'	IC6	<i>tartia</i> 'sorrow'	IC6
<i>donyuzia</i> 'pig'	IC6	<i>teshakia</i> 'mattress'	IC6
<i>dzhaxal</i> 'young'	IC2	<i>tolmales</i> 'dolma'	IC3
<i>yariðes</i> 'woman'	IC3	<i>tsopani</i> 'shepherd'	IC1
<i>jeryánia</i> 'blanket'	IC6	<i>ziaratä, ziaratia</i> 'fest'	IC6
<i>yurbánia</i> 'sacrifice'	IC6	<i>zurnáðas</i> 'zurna'	IC3
<i>kalachia</i> 'conversation'	IC6		

Table 6 Loan nouns of Georgian origin attested in PL

Attested form in PL	IC	Attested form in PL	IC
<i>churchxelas</i> 'churchkhela'	IC3	<i>lobias</i> 'haricot beans'	IC3
<i>chuxaðas</i> 'chokha'	IC3	<i>keipia</i> 'revelry'	IC6
<i>laria</i> 'lari'	IC6		

As it can be observed from the data all loans are adapted to the patterns of the RL, i.e. they follow the same declension rules and are integrated in the same inflectional classes. The same formatives are used in formation of plural (except of those of IC4, IC7 and IC8, as no such instances are attested), however the use of the peculiar PNT suffix *-and* is rare with loans, there was only one example attested with this ending, *muzikants, muzikandas* 'musician' and even this example can be explained in different ways, as there is no direct evidence of its singular form and the form of the SL *muzikant* already includes ending *ant*. There are also some instances, when only plural form is borrowed, see (2a and b)

(2) a.

<i>t=emétera</i>	<i>ta</i>	<i>frúktä</i>	[...]
DEF:N.PL.NGEN=POSS.1.PL:N.PL	DEF:N.PL.NGEN	fruits:N.PL.NGEN _{RUSSIAN}	
'our fruits [...]			

[Skopeteas and Berikashvili 2016: PNT-TXT-VL-00000-B21]

b.

<i>pensianér</i>	<i>ímes</i>
pensioner:M.PL.NOM _{RUSSIAN}	be:1.PL
'We are pensioners'	

[Kotanidi et al. 2016: PNT-TXT-VL-00000-A06]

Thus there is a selective borrowing of the plural form, without parallel borrowing of the base form (see Elšik 2007: 278 for selective borrowings in other languages). Selective borrowing

complicates deduction of the singular form of the noun and IC in which it is integrated. Luckily, such examples are rare.

The neuterization of the gender in plural (see section 4) and case syncretism of core cases is characteristic to loan-nouns as well, see Table 7 for the examples

Table 7 Case syncretism with loan nouns in PL

	[+human]	[-human]	inanimates
NOM.	<i>yarıðes</i> ^{TURKISH}	<i>barashkas</i> ^{RUSSIAN}	<i>churchxelas</i> ^{GEORGIAN}
ACC.	<i>yarıðes</i> ^{TURKISH}	<i>barashkas</i> ^{RUSSIAN}	<i>churchxelas</i> ^{GEORGIAN}

Subsequently, the loan-nouns are fully integrated into patterns of PNT and show the similar inflection and number formation as native nouns.

3. MARKING OF THE NOUN PHRASE FOR NUMBER

Marking of the NP for number, is usually expressed by the agreement within the noun phrase, or by marking on the noun itself. The number agreement within the noun phrase is common in the various types of attributive modifier: adjectives, demonstrative pronouns, articles. In PNT article in NPs depends on morphological and semantic properties of controller, i.e. on gender, number and animacy of the head-noun. In singular gender distinction is well-defined, while plural has joint forms for masculine and feminine and depends on animacy hierarchy. Even in the cases when controller nouns within NP are expressed by [-human] and inanimate nouns and as a result show gender alternation in plural, targets agree with them with respect to the number agreement, see (3)

- (3)
- | | | | |
|--|---|--|---------------------------------|
| ta
DEF:N.PL.NGEN
<i>tráninane</i>
grow:IPFV.PST:3.PL
'Small hens grew up and laid eggs' | mikrá
small:N.PL.NGEN
<i>ke</i>
and | ta
DEF:N.PL.NGEN
<i>óvazane</i>
lay_eggs:IPFV.PST:3.PL | kosáras
hen:F.PL.NGEN |
|--|---|--|---------------------------------|

[Berikashvili 2016: PNT-TXT-VL-00000-B23]

Generally, there are two forms of gender alternation in plural, one for NPs, where the phenomenon reflects the reanalysis of the grammatical gender of the determiner and another for the nouns, where the gender of noun and morphological formatives are changed (see Berikashvili 2017: 30-32 for the discussion).

Agreement in number is observed also in the case of loan-nouns used as controllers, see (4)

- (4)
- | | | |
|---|--------------------------------------|--|
| éxi
have:3.SG
'It has beautiful forests' | émorfa
beautiful:N.PL.NGEN | mesháðas
forest:F.PL.NGEN ^{TURKISH} |
|---|--------------------------------------|--|

[Kotanidi et al. 2016: PNT-TXT-VL-00000-B04]

There are also instances of some nouns that show parallel use of two plurals, one with reanalysis only of the grammatical gender of the determiner within NP, and another for the reanalysis of both determiner's and noun's gender. Thus, for the noun *pólemos* 'war', the only one possibility of PL stated by Papadopoulos (1960: 210) is *ta polémos*, while in PNT as spoken in Georgia, another possibility is attested, see (5)

- (5)
- | | | |
|--|----------------------------|----------------------------------|
| étane
be:PST:3.PL
'There were wars' | ta
DEF:N.PL.NGEN | polémata
war:N.PL.NGEN |
|--|----------------------------|----------------------------------|

[Kotanidi et al. 2016: PNT-TXT-AN-00000-A05]

Two plurals for one noun are attested also in the case of loan-nouns, see (6a and b)

- (6) a.

<i>epéyname</i> go:IPFV.PST:1.PL 'We were going for mandarins'	<i>ja</i> for	<i>ta</i> DEF:N.PL.NGEN	<i>mandarínia</i> mandarin:N.PL.NGEN
--	------------------	----------------------------	---

[Kotanidi et al. 2016: PNT-TXT-VL-00000-C04]

b.

<i>íxamen</i> have:PST:1.PL 'We had tea, mandarins'	<i>vyálame</i> take_out:PST:1.PL	<i>chái</i> tea:N.SG.NGEN	<i>mandarínas</i> mandarin:F.PL.NGEN
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[Kotanidi et al. 2016: PNT-TXT-VL-00000-C14]

In the case of adjective quantifier *polís* 'many' used as attributive modifier within NP, there is a diversity in number marking, thus when controller is expressed by nouns denoting animate or inanimate entities, the number agreement exists, see (7a and b)

(7) a.

<i>aðaká</i> here 'A lot of people were here'	<i>polí</i> many:M./F.PL.BNOM	<i>arθróp</i> person:M.PL.NOM	<i>étanen</i> be:PST:3.PL
---	----------------------------------	----------------------------------	------------------------------

[Kotanidi et al. 2016: PNT-TXT-LG-00000-A04]

b.

<i>s=o</i> LOC=DEF:N.SG.NGEN 'I have been a lot of times in the village'	<i>xoríon</i> village:N.SG.NGEN	<i>polá</i> many:N.PL.NGEN	<i>forás</i> time:F.PL.NGEN	<i>em</i> be:PST:1.SG
--	------------------------------------	-------------------------------	--------------------------------	--------------------------

[Kotanidi et al. 2016: PNT-TXT-MR-00000-B06]

Nevertheless in the case when controller is expressed by collective noun, number is marked only on target, i.e. quantifier and not noun, which remains singular, see (8)

(8)

<i>polá</i> many:N.PL.NGEN <i>aðaká</i> here 'A lot of people came here to Georgia'	<i>laós</i> people:M.SG.NOM <i>s=ti</i> LOC=DEF:F.SG.ACC	<i>írθen</i> come:PFV.PST:3.SG <i>georgia</i> Georgia:F.SG.NGEN
---	---	--

[Kotanidi et al. 2016: PNT-TXT-AN-00000-A02]

In the case of numeral used as attributive modifier, the number is marked on the noun, except of the cases with declinable numerals: *ðío* 'two', *tría* 'three', *tésera* 'four'. Thus, for instance the numeral *ðío* 'two' that in comparison with SMG is declinable in Pontic, has one joint form for masculine and feminine nouns, and one for neuters. In PNT as spoken in Georgia, besides that *ðío* 'two' already includes more than one item in its lexical meaning, it can be marked for plurality as well, and parallel to the plural forms *ðío* – *ðíi* – *ðíos* that are attested in other varieties of Pontic, there is also form *ðía* attested in PNT spoken in Georgia, see (9) for the example

(9)

<i>ðía</i> two <i>vapór</i> boat:N.SG.NGEN 'Two brothers sat in boat and went to Greece'	<i>aðélfia</i> brother:N.PL.NGEN <i>éfiyan</i> go:PFV.PST:3.PL	<i>kátsan</i> sit:PFV.PST:3.PL <i>s=in</i> LOC=DEFT:F.SG.ACC	<i>s=o</i> LOC=DEF:N.SG.NGEN <i>eláðan</i> Greece:F.SG.ACC
--	---	---	---

[Berikashvili 2016: PNT-TXT-AN-2-000-B25]

To sum up, the noun phrase is usually expressed by the number agreement within the NP, even in the cases of gender alternation in plural, the only case of mismatches is when the controller is expressed by collective noun.

4. ISSUES CONCERNING THE COMPUTATIONAL PROCESSING OF PONTIC GREEK DATA WITH REGARDS TO THE REALISATION OF GRAMMATICAL NUMBER

There are a lot of the Natural Language Processing (NLP) systems used for treating languages with non-concatenative type of morphology like Pontic. One of the most famous approaches to the

morphological analysis of such kind of languages is a finite state technology as described by Beesley and Karttunen (2003) and used for the description of Early Modern Greek language by Lampropoulos et al. (2007). Finite state technology is used in morphological processing, semantics and discourse modelling. So, the Morphological Analyzer for Pontic Greek has been developed using finite-state technology, especially, xfst and lexc. The system covers the full inflectional paradigm and is able to do both analysis and generation. The morphotactics is encoded in lexicons and alternation rules - in regular expressions. It supports utf8 character coding which is important for the implementation of the Greek language.

From the linguistic point of view the work is based primarily on Svetlana Berikashvili's *Morphological Aspects of Pontic Greek spoken in Georgia* (Berikashvili 2017) and Papadopoulos' *Historical Grammar of Pontic Dialect* (Papadopoulos 1955). So, the linguistic description of PNT is based on four main aspects:

- Quantity of morphes/slots to be described;
- Internal changes between or within morphes/slots;
- Linguistic theory used for reference, and;
- Of course, Type of dictionary(ies) used.

The morphological transducer developed on the basis of Xerox Finite State Tools (Xfst) has the following structure:

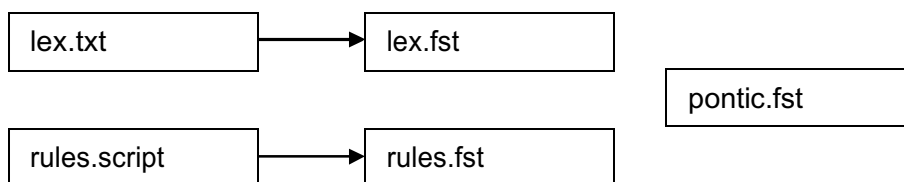


Figure 1: The morphological transducer

The mentioned structure includes 12 PoS Lexicons for Nouns, Adjectives, Numerals, Pronouns, Articles etc. The lexicon data are processed in accordance with the appropriate alternation rules. The morphological analyzer consists of the mentioned lexicons and alternation rules. It allows us to distinguish the appropriate lemma and morphological categories. This resource evaluated against texts from the already mentioned corpus is used for tokenizing, lemmatizing and tagging.

So, for an example we will present a finite state approach to a part of the Pontic Greek morphology, especially, with focus on the nominal morphology bearing in mind that once a solution for the nominal morphology is represented however, it can be extended to cover other word classes in a language like adjectives, pronouns etc. Nominal Pattern of Pontic Greek is characterized by bound morphemes used to show their grammatical function, especially, its structure consists of stem and affix reflecting gender, number and case. So, a simplified Finite State Transducer (FST) model of nominal paradigm is as follows:

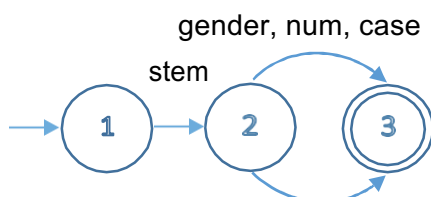


Figure 2: FST model of nominal paradigm

The nominal paradigm is subdivided into eight major classes differing between each other by gender and some sub-classes based on the difference between formation of number (for instance, case syncretism in plural dependent upon animacy distinction). The main problem of Pontic Greek nominal morphology is displacement of stress in Genitive case for nouns consisting of three syllables. For such instances we have added special stress triggers, which allow us to provide the above-mentioned displacement for the following rules:

```
define R1 [ á -> a, é -> e, ó -> o, í -> i, ú -> u || %^S _ ?* [ %^SR | %^SR1 ] ] ;  
define R2 [ a -> á, e -> é, o -> ó, i -> í, u -> ú || ?* %^S3 _ ?* %^SR ] ;
```

After the implementation of rules triggers are removed both from surface and lexical levels.

5. CONCLUSIONS

The results regarding number in PNT as spoken by Pontic-speaking community of Georgia can be presented as follows: (1) the opposition of number values is singular and plural; (2) number is a nominal category; (3) plural number is morphologically marked on nominals and verbs; (4) inflections are sensitive to number; (5) the number marking in nouns reflects binary distinction: inflection may occur separately or together with stem formation; (6) the formatives of plural marking in nouns show four possibilities, which are distributed in different inflectional classes; (7) there is inflectionally active animacy category, which triggers case syncretism of core grammatical cases in plural and neuterization of gender in plural; (8) neuterization of gender shows two possibilities: one for the NPs with the reanalysis of determiner's gender and another for the nouns, where the gender of noun and morphological formatives are changed; (9) the noun phrase is usually expressed by number agreement within the NP, even in the cases of gender alternation in plural, the only case of mismatches is when the controller is expressed by collective no un

All these issues and mismatches were taken into account while producing morphological analyser of Pontic.

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