

ցին¹²⁴: Լիւկոս գետը՝ ներկայիս Գիւլիւն-դըշեւտուն, յիշատակում է նաեւ Քսենոփոնը¹²⁵, իսկ Հիպիասը՝ ներկայիս Բոյուկ-Մելան-չայ գետն է¹²⁶: Ստրաբոնը մարիանդիններին, որոնց ոմանք անուանում են կաւկոններ, համարում է թրակիական ժողովուրդ կամ պափլագոնացիներ¹²⁷, սակայն, ըստ էութեան, մարիանդինները եղել են Փոքր Ասիայի հնագոյն բնակչութիւնը: Կաւկոններին Ստրաբոնը յիշատակում է մարիանդիններից արեւելք՝ մինչեւ Պարթեւնիոս գետը¹²⁸:

Այսպիսով, կատարուած քննութիւնը ցոյց է տալիս, որ III սատրապութիւնն ունեցել է ընդարձակ տարածք, որի սահմաններն Աքեմենեան տիրապետութեան ընթացքում փոփոխուել են, եւ նոյն սատրապութեան նախկին ենթաշրջանները որոշ դէպքերում վերակազմաւորուել են առանձին սատրապութիւններ:

A PROPOSAL FOR PAN-CAUCASIAN ALPHABET¹

Vazgen R. Ghazaryan

1. Introduction

The Caucasus or *Jabal Al-Asun* ("Mountain of Tongues"), as it was named in the annals of medieval Arab geographers, is one of the most prominent places on Earth by the diversity and density of concentration of languages. The region is home to more than 50 nations and ethnic communities², which languages belong to five distinct families. Three of those, namely, the *Northwest Caucasian* (West-Caucasian or Abkhaz-Adyghean), *Northeast Caucasian* (East Caucasian or Nakh-Dagestanian) and *South Caucasian* (Kartvelian) language families are confined within the limits of the Greater and Lesser Caucasus Mountain Ranges³ and currently comprise 41 languages considered native to the region for at least four thousand years⁴.

Located amidst the sphere of distribution, contiguity and mutual influence of the Indo-European, Altaic and Semitic language families, the Caucasus, presumably due to the peculiarities of the landform and relative isolation of mountainous regions, was able to preserve a certain degree of representativeness and sufficient diversity of the three autochthonous language families, preventing their extinction or reduction to a language isolate.

Nevertheless, the historical and political realities, established in the region during the last 200 years⁵, gravely threaten the means of development of these languages and challenge their future existence. For instance, starting from the mid-19th century the majority of native speakers of the NWC (Northwest Caucasian) languages settled beyond the limits of the Caucasus, being almost completely deported in consequence of imperial expansion. As a result, this once multilingual family that was widely and homogeneously spread all over the Western Caucasus, has presently diminished to a few isolated enclaves with a shrinking population. The situation is somewhat different in the Eastern Caucasus, but there also a number of NEC (Northeast Caucasian) languages nowadays count a few thousand of even a few hundred speakers, and being en-

1 The ideas briefly presented in the current synopsis are expounded in the monograph *A Proposal for Pan-Caucasian Alphabet* by Vazgen Ghazaryan (Yerevan, 2012, ISBN 978-9939-0-0603-1; in Armenian and Russian languages).

2 Comrie, Bernard. *Linguistic Diversity in the Caucasus*. Annual Review of Anthropology, Vol. 37, October 2008; Коряков Ю.Б. *Атлас кавказских языков* / РАН. Ин-т языкознания. — Москва: Пилигрим, 2006.

3 Волкова Н.Г., *Этнонимы и племенные названия Северного Кавказа*. М., 1974; Анчабадзе Ю.Д., Волкова Н.Г. *Этническая история Северного Кавказа XVI-XIX вв. II* Материалы к серии "Народы и культуры". Выпуск XXVIII. «Народы Кавказа». М., 1993. Книга 1.

4 Nikolaev S.L., Starostin S.A., *A North Caucasian etymological dictionary*. Moscow, 1994; G.V. Hewitt. *Introduction to the Study of the Languages of the Caucasus*, Lincom Europa, 2004; J. C. Catford. *Mountain of Tongues: The Languages of the Caucasus*, Ann. Rev. of Anthropol., 6 (1977); *Языки мира: Кавказские языки*. (ред. М.Е.

Алексеев, Г.А. Климов, С.А. Старостин, Я.Г. Тестелец), М., Academia, 1999.

5 *История народов Северного Кавказа (конец XVIII в. - 1917 г.)*, Москва, «Наука», 1988.

124 Скилак Карниандский, *Перипл обитаемого моря*, с. 261.

125 *Քսենոփոն, Անարխիս*, էջ 142:

126 Скилак Карниандский, *Перипл обитаемого моря*, с. 267.

127 Страбон, с. 270, 327, 508.

128 Նոյն տեղում, էջ 509:

closed within one or a few villages, are reduced to a *definitely* or *severely endangered* state⁶.

The uncertainty of the future of those North Caucasian languages (NWC and NEC together), which are endangered or under an imminent threat of extinction, isn't stipulated solely by historical, cultural, political and confessional realities of the Caucasus; the absence of one of the most essential components that shape the identity of ethnic communities – a centuries-old written tradition and heritage, places these generally small groups into a vulnerable position against cultural and especially political and religious expansion.

2. Overview of North Caucasian Cyrillic alphabets

Among the languages of three native families of the Caucasus, Georgian is the only one with an uninterrupted centuries-old written tradition, which originated, by prevailing opinion, in the 5th century by virtue of invention of an authentic alphabet. From other Caucasian languages, the presently extinct language of Caucasian Albania – the so-called "Caucasian Albanian" or "Aluanian", "Aghuan", "Aghvan", which belongs to the Lezgian branch of NEC languages and is considered to be the direct ancestor of modern Udi⁷, have had an original written tradition and literature (at least in translation)⁸. During the Middle Ages – in the period

of the spread of Islam, an attempt has been made to adapt a modified version of the Arabic script to some NEC languages⁹. However, due to various reasons it did not turn fully successful in this linguistic area and the Arabic script gained limited use.

Standardized writing systems for the North Caucasian languages (afterwards referred to as NC) have been implemented only in the 20th century. Initially based upon Latin script, the adapted alphabets were shifted to Cyrillic-shaped graphics in the late 30s. Unfortunately, both versions practically do not match with the phonetics of the Caucasian languages since these writing systems originated or have been modified to express totally dissimilar phonetic structures of the source languages. They are extremely deficient for the purposes they were intended for, and present serious difficulties not only for graphical harmony and aesthetics of composition, but also for their practical application and functionality.

More specifically, the limited number of characters and their insufficient flexibility in graphical modifications make these writing systems incapable to represent, in an unambiguous way, the phonetics of the NC languages, which in their turn possess an outstanding feature of having one of the richest consonant inventories among all the languages of the world.

For instance, the language of the Ubykhs (extinct since 1992) has 86 con-

⁶ <http://www.unesco.org/culture/languages-atlas/>

⁷ Панчвидзе В. Н., Джейранишвили Е. Ф. *Удинский язык // Языки народов СССР*. М., 1967. Т. 4. Иберийско-кавказские языки. с. 676-688.

⁸ J. Gippert, W. Schulze, Z. Aleksidze, J.-P. Mahé (eds.). *The Caucasian Albanian Palimpsests of Mount Sinai*. Wrocław, 2009.

⁹ Атаев Б.М. *Аварцы: история, язык, письменность*. Махачкала, 1996; Маламагомедов Д.М. *Арабо-дагестанские культурные, литературные контакты и их роль в формировании дореволюционной аварской литературы*. Знание. Понимание. Умение, 5, 2008 (<http://www.zpu-journal.ru/e-zpu/2008/5/Malamagomedov>)

sonants and two vowels¹⁰; the Archi language, presently reduced to nearly 1000 speakers¹¹, distinguishes 107 phonemes¹²: 81 consonants and 26 vowels (many of the former do not have exact correspondences in other languages¹³); the consonant inventory of Bzyp dialect¹⁴ of Abkhaz includes 68 phonemes, etc.

All Caucasian languages have a regular three-level phonation for stops and affricates (voiced, ejective and aspirated voiceless), whereas the Cyrillic script distinguishes only two levels of phonation (voiced and unaspirated voiceless) in case of stops and one (aspirated voiceless) in case of affricates. The Latin alphabet does not represent affricates at all. However, if the Latin alphabet, with all its drawbacks, acquired a more or less conventional set of auxiliary signs and supplementary characters due to a wide usage among a vast number of languages during two millennia, the Cyrillic script until the 20th century has chiefly been confined to a limited range of a few Slavic languages sharing similar phonetic traits.

And, since writing systems containing nearly 30 graphemes are essentially unfit for full phonemic rendition with simultaneous preservation of the alphabetic principle (i.e. one-to-one correspondence between graphemes and phonemes) in case of languages possessing 50 phonemes in average, ambiguous sets of symbols often with illogical combinations were introduced into the alphabets of particular NC languages during the adaptation of the Russian script.

Another important reason why these adaptations fail to be consistent is that this script has evolved in the environment of Russian language and therefore is specifically intended to express its pronunciation peculiarities alone¹⁵. It possesses only two means of alteration of articulation – palatalization, expressed by the sign *ь*, and depalatalization, which is mostly omitted in current orthography, but if necessary, is marked by the sign *ъ*. Meanwhile, the NC languages feature four different types of coarticulation – labialization (^ʷ), palatalization (^ʲ), pharyngealization (^ʕ) and labiopharyngealization (^{ʷʲ}). Among these only palatalization can be regularly expressed by the Russian script using *ь* symbol. On the other hand, in present Cyrillic orthographies for various Caucasian languages the sign *ь* gained a composite and very tangled usage, indicating not only various alterations in phoneme articulation, but also for introduction of letter compounds having very little in common with the characters they are based upon. The latter one can see, for

¹⁰ Hewitt B.G. *North West Caucasian*. *Lingua*, 115, 2005. pp. 91–145.

¹¹ According to the 2010 census (http://www.perepis-2010.ru/results_of_the_census/).

¹² Михайлов К.Ш. *Арчинский язык*, Махачкала, 1967; Кибрик А.Е., Кодзасов С.В., Оловяникова И.П., Самедов Д.С. *Опыт структурного описания арчинского языка*. Т. 1-3. М., 1977; Кибрик А.Е., Кодзасов С.В. *Сопоставительное изучение дагестанских языков: Глагол*. М., 1988; Кибрик А.Е., Кодзасов С.В. *Сопоставительное изучение дагестанских языков: Имя, фонетика*. М., 1990.

¹³ Ladefoged P., Maddieson I., *The Sounds of the World's Languages*, Blackwell Publishing, 1996.

¹⁴ V.A. Chirikba. *Abkhaz*. *Languages of the World/ Materials* 119. München: Lincom Europa, 2003; Hewitt B.G. *Abkhaz* // Hewitt B. (ed.) *The Indigenous Languages of the Caucasus*, Vol. 2. New York: Caravan Books, 1989. [pp. 39–88].

¹⁵ Halle M., *Sound Pattern of Russian*, MIT Press, 1959.

the minimal consonant inventory²².

In summary, we may conclude that presently there are practically no alphabets with a satisfactory level of phonematicity for the languages of both NC families. Moreover, in Cyrillic script we deal with a quite inconsistent system of symbols. Its potential in respect of grapheme morphology and structural correspondences is extremely low and insufficient not only for a simple, practical and phonemically complete rendition of the NC languages, but also for their aesthetic graphical representation.

The latter is of paramount importance for psychology of writing and determines the representativeness and competitiveness of an authentic language under the dominance of another – an official language with an identical script. This can be exemplified in an Adyghe text that looks as follows:

*Ублапэм щегъэжьагъэу а Гуцылэр
Тхъэм ыдэжь цылагъ. Тхъэм а Гуцылэм
зэкIэри кыыригъэгъэхуыгъ... Тхъэм кыыгъэ-
хуыгъэ пстэуми ащыцэу а Гуцылэм кы-
рымьыгъэгъэхуыгъэ зи цылэп.*

It is needless to prove the obvious fact that a similar graphic portrayal of a language can never possibly ensure and assist its literary development.

Besides the imperfection of the writing system or even its absence, the

22 "One of the decisions which had to be made in developing languages in the Caucasus concerned the selection of a particular dialect upon which to base the literary language. ... Among the NWC languages the choice depended partly on phonology. For Adyghe, the Temirgoi (or Chemgui) dialect was selected partly because it had the simplest sound system - only 50 consonants as against the 60 of Shapsugh or the 64 of Bzhedukh. For Abkhaz, the first choice was the Bzyb dialect, but later the phonologically simpler Abzhui dialect became the basis of the literary language." (Catford, *Mountain of Tongues*, page. 297).

official status and the cultural dominance of Russian has a no less considerable impact on the marginalization of the spheres of usage of the native Caucasian languages, promoting their gradual extinction. A large number of languages, among which were examples unique by their grammatical and phonetic properties, either completely died out (Ubykh) or are on the brink of extinction, being reduced to a few hundred or thousand of speakers, such as Archi²³, Akhvakh²⁴, Khinalug²⁵, Khwarshi²⁶, Karata²⁷, Tsez²⁸, Hinukh²⁹, Hunzib³⁰, Bezhta³¹, Botlikh³², Tindi³³, Ghodoberi³⁴, Kryts³⁵, Budukh³⁶, Udi³⁷ and many others³⁸.

23 970 speakers by Ethnologue entry for Archi (<http://www.ethnologue.com/language/aqc>)

24 210 speakers by Ethnologue entry for Akhvakh (<http://www.ethnologue.com/language/akv>)

25 1000 speakers by Ethnologue entry for Khinalug (<http://www.ethnologue.com/language/kij>)

26 1740 speakers by Ethnologue entry for Khwarshi (<http://www.ethnologue.com/language/khv>)

27 260 speakers by Ethnologue entry for Karata (<http://www.ethnologue.com/language/kpt>)

28 12500 speakers by Ethnologue entry for Tsez (<http://www.ethnologue.com/language/ddo>)

29 5 speakers by Ethnologue entry for Hinukh (<http://www.ethnologue.com/language/gin>)

30 1010 speakers by Ethnologue entry for Hunzib (<http://www.ethnologue.com/language/huz>)

31 6110 speakers by Ethnologue entry for Bezhta (<http://www.ethnologue.com/language/kap>)

32 210 speakers by Ethnologue entry for Botlikh (<http://www.ethnologue.com/language/bph>)

33 2150 speakers by Ethnologue entry for Tindi (<http://www.ethnologue.com/language/tin>)

34 130 speakers by Ethnologue entry for Ghodoberi (<http://www.ethnologue.com/language/gdo>)

35 5000 speakers by Ethnologue entry for Kryts (<http://www.ethnologue.com/language/kry>)

36 1000 speakers by Ethnologue entry for Budukh (<http://www.ethnologue.com/language/bdk>)

37 6590 speakers by Ethnologue entry for Udi (<http://www.ethnologue.com/language/udi>)

38 *Encyclopedia of the world's endangered languages*. Edited by Christopher Moseley. London & New York:

Granting these languages a new impetus and means for development may be a possible break through the mentioned difficulties. To achieve this goal we propose a scientifically valid development of completely new and well-adapted Caucasian alphabets ensuring they are adjusted by morphology of symbols and their modification logic. Concurrently, they are to correspond to the complex intrinsic phonetic features of these languages, render them with full phonemic representativeness and alphabetical unambiguity, and, furthermore, hinder any irrelevant political or cultural context and enforcing influence.

The best illustrations to the aforesaid considerations are the 16-hundred year old time-tested alphabets of once dominant languages of the South Caucasus and the Armenian Highlands – Armenian, Georgian and the extinct and only recently deciphered Caucasian Albanian³⁹. Among the writing systems of the world, these three alphabets are distinguished by their highest level of grapheme-to-phoneme correspondence and are listed among the phonetically most perfect. Caucasian Albanian, inter alia, was the only language of the South Caucasus possessing phonetic features similar to the NC languages and an ancient alphabet adapted to it.

Throughout the centuries, the viability of the Armenian and Georgian alphabets, alongside with tradition and some peculiarities of the identity of these two nations, was supported by the fundamental fact: they reflect the phonetics of these languages with the

highest level of perfection. These alphabets were never superseded by the Greek, Aramaic, Arabic, Russian or Latin scripts, as they weren't adopted or modified, but from the beginning developed on the basis of a meticulous scientific analysis of the phonetics of Armenian and Georgian (as well as Caucasian Albanian). In their triunity, these remarkable examples of cultural heritage of the contemporary Caucasian region once unified the three nation-states of the South Caucasus and the Armenian Highlands in a common but mutually independent and unique writing tradition. The current project is an attempt to restore former triunity, which has been interrupted after one of its essential parts – the Caucasian Albanian alphabet became obsolete and fell into oblivion.

Hence, we set forth the idea to introduce completely original, easily legible, and most importantly – phonetically perfect and graphematically thorough writing systems for the NC linguistic area, based on the character forms and graphical principles of construction of the alphabets of geographically adjacent and historically akin South Caucasus.

If formulated properly, this problem, however complicated it may seem to be, does not cause any principal difficulties. With an appropriate political will and flexible approach, it might have had a satisfactory solution as early as in the beginning of the 20th c.

3. General principles

As already has been mentioned, at present there exist about 40 NC languages which belong to two distinct families. The Northwest Caucasian family includes Abkhaz, Abaza, Adyghe,

Routledge, 2007, pp. 211–280 (<http://www.helsinki.fi/~tasalmin/chris.html>).

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Kabardian and Ubykh (now extinct) languages. The Northeast Caucasian family has a greater variety and consists of several branches (Avar-Andic, Tsez, Nakh, Lezgian, Dargic) and two isolates (Lak, Khinalug), comprising 32 languages in total.

The phonetic systems of these languages share similar features, mainly in the sets of consonants. It is especially evident in the languages that belong to the same group or branch. But besides similarities, the differences are also very prominent, even between various dialects of the same language which often can be so divergent that are mutually unintelligible and hence sometimes even considered as separate languages (e.g. Kubachi, Itsari, Kajtak, Chirag and other "dialects" of Dargi dialect continuum etc.).

These intricate features of phonetic differences and similarities are the main reason we abandoned our initial intension to introduce distinct alphabets for every NC language, since if based on a particular language (the literary or the most widespread form), the intended alphabet would be very difficult to readapt to a sister language or even its own particular dialect. The result of such an approach would be no different from the present situation with the Cyrillic alphabets, which, as already has been mentioned, fail to represent the phonetic systems of even very closely related languages and dialects.

Hence, we propose a new *deductive* or *unifying* principle based on the similarities of phonetics of the NC languages, namely, a construction of a complete table of overall phonetic diversity of these languages, including all actual places and manners of articula-

tion, types of coarticulations and airstream mechanisms involved, with subsequent creation of an alphabetic system for this generalized table of phonemes. Given a character base suitable for full-phonemic transcription of the NC languages, this approach overcomes and eliminates all difficulties associated with the differences in phonetic systems of genetically related languages and dialects. It also presents a unique opportunity to unify their orthographies in a mutually legible manner. By this approach, every particular language derives its alphabet collecting the graphemes for the phonemes it has in its inventory from this generalized system.

This is also the main reason that despite having 52 distinct characters in its inventory, the Caucasian Albanian alphabet is unsuitable for this purpose as the overall phonetic diversity of the NC languages exceeds its number of letters more than twice. Moreover, the Caucasian Albanian alphabet, being created in the 5th century for a particular language (now extinct) of the Lezgian branch of the NEC languages, does not have distinct symbols to represent the various types of articulatory peculiarities present in the other languages, even those within the same branch. The adaptation of the Caucasian Albanian script is no different from the adaptation of the Cyrillic alphabet and raises the very same issues and obstacles that made the present Cyrillic alphabets unsuitable for these languages.

Hence, we propose to elaborate the new NC alphabets on the basis of the combined capacity of all three South Caucasian historical alphabets in a very peculiar manner, using the unseen advantages they inhere within.

4. Structural analysis of the South Caucasian alphabets

Below we present an attempt to analyze the backbone principles of graphical shaping and character generation in the South Caucasian historical alphabets in order to reveal the necessary set of rules which we shall use to design the fundamental character inventory for the creation of independent and phonetically exhaustive alphabets for the NC languages.

To avoid possible misunderstanding, it should immediately be noted that the current analysis by no means implies that the letter-forming principles portrayed below were perceived in a similar manner by Saint Mesrop Mashtots, the creator of the Armenian alphabet, or Rufinus of Samosata, its first calligrapher, or that the authors (Mesrop Mashtots or others) used such a system in course of the creation (or systemization) of the Armenian, Old Georgian and Caucasian Albanian alphabets. It is a mere attempt to reveal *de facto* forms

and graphical elements adjusted in the scripts as they originated and developed throughout the ages.

The disclosure and consolidation of letter-forming principles in these alphabets with further generation of a summarized table of all admissible and alternative combinations, rendered according to discovered rules of proportion, presents an exceptional possibility to extend the sphere of the practical usage of these writing systems. On the one hand, it generalizes the graphics of the these alphabets; on the other hand, it demonstrates the overall potential of the character-forming techniques, which in its turn gives us a necessary degree of freedom to apply a morphological approach in the course of creation of letters for NC alphabets to be designed.

1. The first direct observation one can make is that the Armenian, Old Georgian⁴⁰ (Asomtavruli) and Caucasian Albanian⁴¹ alphabets are visually very similar, which is mainly condi-

Armenian	Ա Ձ Ս	Ո Ռ	Դ Դ Գ	Բ Բ Ը Զ Ի	Ե Լ	Ճ		
Old Georgian	Ա	Ո	Դ Դ Դ	Բ Բ	Ի	Լ Ե Զ Ի	Ճ Ժ Ժ	
Caucasian Albanian	Ա Ա Ա		Դ Դ Գ Գ Գ Գ	Բ Բ	Ի Ի	Լ Ե Զ	Ճ Ժ Ժ Ժ	
Armenian	Ճ	Ը	Օ Օ	Տ Տ Տ	Չ Չ Չ	Չ Ը	Խ	
Old Georgian	Ճ		Օ Օ	Տ Տ		Չ Կ Կ	Չ Ը Ը	
Caucasian Albanian	Ճ	Չ Ը Ը	Օ	Տ Տ	Չ Չ	Չ Կ Կ Ը Ը Ը Ը Ը	Չ Խ Խ Խ	
Armenian		Պ	Կ	Կ	Փ	Փ ֆ	Ի Է Լ	
Old Georgian	Ի Ի		Կ	Կ	Ֆ	Փ Գ	Է	Լ Լ
Caucasian Albanian	Ի Ի	Պ	Կ	Կ Կ	Փ		Լ Լ Լ Լ Լ	

40 Т.В. Гамкрелидзе. *Алфавитное письмо и древнегрузинская письменность*, Тбилиси, 1989.

sions, while generating a full system of graphical rules, carry no morphological meaning whatsoever: symbols with similar extensions or bases have no articulatory affinity (e.g., Armenian letters Բ /b/, Ե /e~je/, Դ /d/, Ը /r/, Old Georgian Կ /b/, Լ /x/, Զ /t/, etc.).

5. Besides arcuated characters, in the South Caucasian alphabets there is also a number of symbols constructed using lines (Ճ, Չ, Կ, Լ, Ե, Ը, Զ), circles (Ձ, Զ, Ձ, Ձ, Ը, Ը, Ը, Ը, Տ, Տ, Տ, Տ, Տ, Փ, Օ, Պ, Պ, Օ, Ծ etc.) and other elements (Խ, Խ, Խ, Խ, Խ). Their junction capacity is not as diverse as in case of arcuated letters and depends on the peculiarities of individual shapes.

Thus, the character-forming capacity of the Armenian, Old Georgian and Caucasian Albanian alphabets obtains its holistic appearance. We do not illustrate the overall chart of all possible combinations of lines, arches and circles that can be constructed by the rules indicated above, nor do we draw the complete chain of compounds shaped from the base symbols via extensions (single or multiple), but especially stress that their graphical diversity and resulting quantity is extremely large (more than 500 characters not counting the multi-extensional compounds). This extended and summarized set of symbols we afterwards refer to as *Generic South Caucasian System*⁴³.

5. The North Caucasian languages and the Generic South Caucasian System

Revealing all letter-shaping principles of the South Caucasian historical alphabets in the previous section, we

have generalized its character forms and generated a regular set of symbols with very high internal diversity and constructive capacity.

Comparing the induced system with the quantity of characters necessary for complete phonemic rendition of the NC languages, one can easily ascertain that it meets all possible requirements. Moreover, the inherent graphical diversity of base and compound symbols allows us to apply a morphological approach during the assignment of phonetic values to the new letters. Functionally, it is similar to the general principles of character formation used in *abugidas* which differ from usual syllabaries in methods of graphical expression of the syllables. While in "common" syllabic systems the visual forms of the syllables that share the same consonant or vowel are arbitrary and generally independent from each other (cuneiform, hieroglyphic Luvian, Cretan, Cypriot, Cherokee and both Japanese syllabaries etc.), in *abugidas* the letters for the syllables with same consonant base have similar shape; the vowels are marked via graphical extensions fused with the character of the consonant (which usually is the symbol for "consonant+a" type syllables).

Letter modification in Ge'ez abugida

	(+ä)	+u	+i	+a	+e	+ə	+o
s	ሰ	ሱ	ሲ	ሳ	ሴ	ስ	ሶ
š	ሸ	ሹ	ሺ	ሻ	ሼ	ሽ	ሾ
b	በ	ቡ	ቢ	ባ	ቤ	ብ	ቦ
d	ደ	ዱ	ዲ	ዳ	ዴ	ድ	ዶ

Image 5

Abugidas are the simplest and most convenient among all writing systems containing 80-100 characters, since they are constructed by morpho-

logical principles that make sufficient the memorization of only the base characters and the rules of conjunction (or other means of shape modification). In Image 5 we present some characters of the Ethiopian (or Ge'ez) script which explicitly illustrates the mentioned principle.

Since we plan to introduce a common and full phonemic alphabet for all NC languages, it must contain nearly 100 symbols: 86 Ubykh and additional Abkhaz, Adyghe and Abaza consonants for the NWC languages, a similar quantity for the NEC languages, as well as a generic vowel system. Meanwhile, the memorization of such quantity of characters is quite difficult considering the articulatory similarity between various phonemes which have the same place and manner articulation but differ in ways of coarticulation. In case of arbitrary selection of characters and lack of a precise and logical system may lead to gross confusion (see Image 6).

Hence, to simplify the memorization of the graphemes, one is to adopt a morphological approach and apply methods substantially similar to those used in *abugidas*.

Uvular fricatives in Ubykh

	χ	χ ^w	χ ^j	χ ^ʃ	χ ^{ʃw}
Voiceless	ᶘ	ᶙ	ᶚ	ᶛ	ᶜ
	κ	κ ^w	κ ^j	κ ^ʃ	κ ^{ʃw}
Voiced	ᶘ	ᶙ	ᶚ	ᶛ	ᶜ

Image 6. Arbitrary assignment

Therefore, from the Generic South Caucasian System we have to select and fix a certain ensemble of rules of character modification capable of solving the problem with the highest possi-

ble degree of simplicity.

The capacity of this Generic System, as one can easily be convinced, is twenty times as many as is necessary to express the phonetic diversity of the languages of South Caucasus. It comprises all letters of the South Caucasian historical alphabets and presents exceptional possibilities in terms of character shaping and methodical construction of independent alphabets. It possesses nearly 1000 distinct symbols, formed via extensions fused with the base characters in various ways and positions.

Hence, the logic and essence of the morphological approach to the construction of new NC alphabets must be based on two fundamental principles.

- Assignment of the characters simplest by form, to the phonemes simplest in articulation.
- Expression of coarticulations (labialization, palatalization, pharyngealization) and types of airstream mechanisms (pulmonic: voiced and aspirated, and non-pulmonic: ejective) by means of various extensions.

Taking into account all phonological peculiarities of the NC languages and examining multifarious alternatives, we have chosen the following set of rules of letter-formation for **consonants** as a basis holding the highest degree of arrangement concordance.

1. The three types of *airstream mechanisms* involved ("three-level phonation").

- The *base* letter-forms are ascribed to the consonants with no phonation (aspirated **voiceless**) in case of stops, affricates and fricatives, and to the voiced approximants

43 V. Ghazaryan. *A Proposal for Pan-Caucasian Alphabet*. Yerevan, 2012, pp. 51-72.

Generic Northwest Caucasian alphabet

U	W	U	P	Q	R	S	T	V	X	Y	Z	A	B
a	a:	p	b	p'	p ^w	p ^f	b ^f	p ^h	t	d	t'	t ^w	d ^w
Q	U	U	U	Q	Q	Q	Q	Q	C	U	U	Q	Q
t ^w	k	g	k'	k ^w	g ^w	k ^w	k ^f	g ^f	k ^h	ε	q	q'	q ^w
Q	U	U	U	Q	Q	Q	+	+	+	+	+	+	+
q ^w	q ^f	q ^h	q ^f	q ^h	q ^h	q ^h	?	?	?	i	ts	dz	ts'
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
ts ^w	dz ^w	ts ^w	tʃ	dʒ	tʃ'	tʃ'	dʒ	tʃ'	tʃ'	dʒ ^w	tʃ ^w	i	ts
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
dʒ	ts'	f	v	f	h	v ^f	s	z	t	ʒ	f'	ʒ	ʒ
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
ε	z	ε ^w	z ^w	u	ʒ	z	ʒ'	ʒ ^w	z ^w	ʒ ^w	x	γ	x ^w
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
x ^f	o	χ	κ	χ ^w	κ ^w	χ ^f	κ ^f	χ ^h	κ ^h	χ ^h	κ ^h	h	ʔ
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
h ^w	ʔ ^w	h	m	m ^f	n	w	w ^f	r	l	j	q		

As one can easily see ascertain, the memorization of this alphabetic system raises no serious difficulties, as it contains only 32 basic letters (26 consonants and 6 vowels), lesser than the Cyrillic script. All other diverse characters are regularly shaped from those 26 symbols, using 5 simple rules. It is incomparably less than the unpredictable, tangled and confusing combinations one must keep in mind while dealing with the Cyrillic script. As well, opposed to the latter, this alphabetic system is easily legible, graphematically thorough and, most importantly, truly phonemic, what eventually makes it perfectly adapted to the NWC languages.

From this generic set of characters the individual NWC languages derive their specific alphabets. In particular, the Pan-Circassian or common Adyghe alphabet, intended to unite the orthographies of both literary standards (Adyghe and Kabardian) as well as all other dialects of the Circassian dialect continuum, is presented. Here and further square brackets indicate the phonemes that occur in loanwords only. The Abkhaz and Abaza alphabets are similarly derived from the given general set⁴⁶.

46 V. Ghazaryan, pp. 93-98.

Pan-Circassian alphabet

U	W	U	P	Q	R	S	T	V	X	Y	Z	A	B
a	a:	wa	p	p:	b	p'	p ^w	t	t:	d	t'	t ^w	[k] [g]
[U]	Q	Q	Q	Q	C	U	U	U	Q	Q	Q	+	+
[k]	k ^w	k ^w :	g ^w	k ^w	ε	q	q:	q'	q ^w	q ^w :	q ^w	?	?
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
i	ts	ts:	dʒ	ts'	ts ^w	ts ^w :	dʒ ^w	tʃ	tʃ:	dʒ	tʃ'	tʃ'	dʒ
Z	I	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
tʃ'	i	f	v	f	h	s	z	t	ʒ	f'	ʒ	ʒ	ʒ
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
u	ʒ	z	ʒ'	ʒ ^w	z ^w	ʒ ^w	x	γ	x ^w	o	χ	κ	χ ^w κ ^w
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
h	m	n	w	w ^f	r	[C]	l						

The generic alphabet of the NEC languages has a slightly different appearance. It is normally presented with no indication of coarticulations, which are quite different in distinct languages. The most noticeable differences occur in affricates and laterals, as well as in the use of a more elaborated vowel system, since the NEC languages generally have a well-developed vocal-

ism with such articulatory features as nasalization, pharyngealization, tonal pitch etc., which in every particular case are expressed by means of graphical extensions, which have phonetic assignments different from those used for consonant modifications. Below we present the formal layout of the generalized NEC alphabet.

Generic Northeast Caucasian alphabet

U	U	U	P	Q	R	S	T	V	X	Y	Z	A	B
a	æ	a	p	b	p'	t	d	t'	t ^w	d ^w	t ^w	c	j
Q	Q	Q	Q	Q	Q	C	U	U	U	U	Q	Q	Q
c'	k	g	k'	k ^w	g ^w	k ^w	ε	æ	q	g	q'	q ^w	g ^w
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
q ^w	?	?	i	γ	ts	dʒ	ts'	ts ^w	dʒ ^w	ts ^w	tʃ	tʃ'	tʃ ^w
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
tʃ ^w	tʃ'	dʒ	tʃ'	tʃ ^w	dʒ ^w	tʃ ^w	kx	gʏ	kx'	i	ɛ	qʏ	gʏ

Ը	Բ	Բ	Բ	Խ	Փ	Փ	Փ	Ն	Ճ	Ճ	Ճ	Յ	Տ
qX'	qX''	qX'''	qX''''	ə	e	f	v	s	z	s''	z''	t	ʃ
Յ	Ո	Ս	Ս	Ժ	Ժ	Յ	Յ	Ջ	Ջ	Ջ	Ջ	Օ	Լ
t''	u	ʃ	ʒ	ʃ''	ʒ''	ɟ	j	x	ɣ	x''	ɣ''	o	χ
Ե	Բ	Բ	Յ	Ծ	Յ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ
ɛ	χ''	ɛ''	h	ɸ	h''	h	m	n	w	r	l	j	

We shall not present the particular alphabets of all 32 NEC languages⁴⁷, but only some being the most widespread or having the most intricate consonant systems.

For instance, the derived alphabets for Avar, Lezgian, Dargwa and Chechen, are presented below.

Avar alphabet

U	Բ	Բ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ
a	p	b	t	d	t'	t''	d''	t'''	k	k:	g	k'	
ԳԳ	Գ	ԳԳ	Գ	Գ	ԳԳ	Կ	+	Ի	Ծ	ԾԾ	Ծ	Ծ	Ծ
k':	k''	k''':	g''	k''''	k''''':	ɛ	?	i	ts	ts:	ts'	ts''	
Գ	Գ	Գ	Գ	Ծ	ԾԾ	Ծ	ԾԾ	Ծ	Ծ	Ծ	Ծ	Ծ	Ծ
ts''''	ts'	ts''	ts''':	tʃ	tʃ:	tʃ'	tʃ''	tʃ'''	tʃ''''	tʃ''''':	qX:	qX':	
Բ	Բ	Ն	Ն	Ճ	Ճ	Ճ	Ճ	Ճ	Ճ	Ճ	Ճ	Ճ	Ճ
qX''':	qX'''':	s	s:	z	s''	z''	t	t:	t''	u	ʃ	ʃ:	
Ս	Ս	ՍՍ	Ս	Օ	Լ	ԼԼ	Ե	Ե	ԵԵ	Ե	Յ	Ծ	Ծ
ʒ	x	x:	x''	o	χ	χ:	ɛ	χ''	χ''':	ɛ''	h	ɸ	ɸ
Յ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ
h''	h	m	n	w	r	l	j						

The common Lezgian alphabet includes all dialectal phonemes absent in the literary language.

47 V. Ghazaryan, pp. 106-148.

Lezgian alphabet

U	Ա	Բ	ԲԲ	Բ	Բ	Գ	ԳԳ	Գ	Գ	ԳԳ	Գ	Գ	Գ
a	æ~a'	p	p:	b	p'	t	t:	d	t'	t''	t''':	d''	
Գ	Գ	ԳԳ	Գ	Գ	Գ	ԳԳ	Գ	Գ	Կ	Կ	ԿԿ	Կ	Կ
t''''	k	k:	g	k'	k''	k''':	g''	k''''	ɛ	q	q:	ɔ	
Կ	Կ	ԿԿ	Կ	+	Ի	Ծ	ԾԾ	Ծ	Ծ	Ծ	Ծ	Ծ	Ծ
q'	q''	q''':	q''''	?	i	y~u'	ts	ts:	dz	ts'	ts''	ts''':	
Գ	Ծ	ԾԾ	Ծ	Ծ	ԾԾ	Ծ	Ծ	Ծ	Փ	Ն	Ճ	Ճ	Ճ
ts''''	tʃ	tʃ:	dʒ	tʃ'	tʃ''	tʃ''':	tʃ''''	f	s	z	s''	z''	
Ո	Ս	Ս	Ժ	Ժ	Ս	Ս	Ս	Ս	[O]	Լ	Ե	Ե	Ե
u	ʃ	ʒ	ʃ''	ʒ''	x	ɣ	x''	[o]	χ	ɛ	χ''	ɛ''	
Յ	Ծ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ
h	ɸ	h	m	n	w	r	l	j					

The Dargwa alphabet is derived for literary Dargwa.

Dargwa alphabet

U	Ա	Բ	Բ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ	Գ
a	æ~a'	p	p'	t	d	t'	k	g	k'	ɛ			
Գ	Գ	Գ	Բ	+	Ի	Ծ	Ծ	Ծ	Ծ	Ծ	Ծ	Ծ	Ծ
q	ɔ	q'	?	?	i	ts	dz	ts'	tʃ	dʒ			
Ծ	Փ	Ն	Ճ	Ո	Ս	Ս	Յ	Ս	Ս	Ս	[O]		
tʃ'	f	s	z	u	ʃ	ʒ	ɟ	x	ɣ	[o]			
Ե	Ծ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ	Կ
ɛ	ɸ	h	m	n	w~v	r	l	j					

Chechen language has the most abundant vowel system of all NC languages. In order to reduce number of letters in the alphabet, the consonant pharyngealization and vowel nasalization are marked with supplementary aphonic characters. The fortis conso-

nants are widespread and represented by duplication as usual, but not included in the standard character inventory. Hereby, the derived alphabet for Chechen language has the following form.

8. Conclusion

Thus, pooling together the available scientific research on the Caucasian phonology and summarizing the general pattern of the overall phonetic diversity of these families, we have constructed *phonetically complete featural alphabets*, based on a peculiar usage of the morphological principles of construction of millennial South Caucasian alphabets.

For this purpose the whole graphematic and constructive potential of these writing systems was revealed and analyzed, and, based on their generalized grapheme matrix, a solid and thoroughly arranged regular system of characters was proposed. It has exceptional properties for precise and alphabetically unequivocal rendition of all phonetic peculiarities of the NC languages possessing the largest consonant inventory among all the languages of the world. The set of distinct rules for grapheme formation enables one to memorize a large number of visual forms with no difficulty whatsoever.

To achieve maximum efficiency, two similar but mutually independent generalized sets of characters for the NWC and NEC language families are introduced, wherefrom the specific alphabets for the particular languages are subsequently deduced.

Additionally, for the Ossetic lan-

guage alike, which is an integral part of the Caucasian heritage, an independent alphabet sharing the features of both the newly developed NC and the ancient South Caucasian alphabets has been created.

Thus, we attempt to give a new and historically sound unity and continuity to the millennial writing culture of the Caucasian region, a new impulse to the development of greater speech communities, as well as viability for preservation and future revival to smaller ones currently on the verge of extinction. Unlike all previous attempts, the developed featural alphabets are not adopted, and they do not copy the writing of any linguo-cultural, religious or political order directly or indirectly reducing to a secondary position the original and unique Caucasian languages.

They are aimed to renew and reinterpret the distinct historical, linguistic, cultural and philosophical heritage of the South and North Caucasus in a united and coherent Caucasian context.

The thorough discussion of the matter and the specific alphabets, derived to fit the phonetics of particular Caucasian languages, can be found in the monograph *A Proposal for Pan-Caucasian Alphabet* (Yerevan, 2012, ISBN 978-9939-0-0603-1) published in Armenian and Russian.

LE MANUSCRIT JÉRUSALEM 121 DU COUVENT SAINT-JACQUES DE JÉRUSALEM: SON IMPORTANCE POUR L'INTELLIGENCE DES LITURGIES CAUCASIENNES, ARMÉNIENNE, GÉORGIENNE ET ALBANIENNE¹

Fr. Ch. Renoux

Trois manuscrits arméniens, — les Շաշոց (čašoc') Couvent Saint Jacques n° 121, Paris Bibliothèque Nationale n° 44 et Érévan Maténadaran n° 985 —, ont dévoilé de manière précise, selon la nomenclature du calendrier julien, la succession de toutes les célébrations annuelles de l'Église de Jérusalem ainsi que leurs textes bibliques, pour la période 417- 439. Avant 417, nous ne savions que très peu de chose sur le déroulement de l'année liturgique dans l'Église-mère. Seules apparaissent çà et là, dans quelques écrits des Pères de l'Église, de rares informations que l'on peut décliner comme suit : l'existence, au II^e-III^e siècle, d'une vigile pascale au cours de laquelle l'évêque Narcisse († après 212) changea l'eau en l'huile qui manquait pour les lampes éclairant l'assemblée, miracle rapporté par Eusèbe de Césarée au VI^e Livre de son *Histoire Ecclésiastique*² ; au III^e siècle, les *Homélies sur Samuel* d'Origène, invité par l'évêque Alexandre († vers 251) à prêcher à Jérusalem, nous appren-

nent que des péricopes du I^{er} Livre des Rois étaient lues au cours d'offices liturgiques non précisés³ ; au IV^e siècle, la *Lettre canonique aux Arméniens* de l'évêque Macaire (314-335/336) mentionne les solennités de l'Épiphanie, de Pâques et de la Pentecôte comme des jours où le Baptême peut être conféré⁴ ; et enfin les *Catéchèses baptismales et mystagogiques* de Cyrille de Jérusalem († 387) lèvent le voile, mais de manière imprécise, sur les lectures bibliques proclamées au cours des périodes du carême et de la semaine pascale⁵. Nous reviendrons plus avant sur *l'Itinerarium Egeriae*, description rapide des offices liturgiques de chaque semaine et des fêtes les plus solennelles des années 381-384 durant lesquelles Égérie

¹ Texte revu d'une conférence faite le 20 novembre 2012 lors d'un Colloque à la Gulbenkian Library du Patriarcat Arménien du Couvent Saint-Jacques de Jérusalem.

² Eusèbe de Césarée (*Hist. Eccl.* VI, 9; Sources Chrétiennes = SC désormais), vol. 41, Paris, 1955, p. 97-99.

³ Cf. Ch. RENOUX, «Origène dans la liturgie de Jérusalem», dans *Adamantius* (1999), p. 37-52; et l'on retrouve ces péricopes dans la liturgie du carême des versions arménienne et géorgienne du *Lectionnaire de Jérusalem*.

⁴ Cf. A. TERIAN, *Macarius of Jerusalem, Letter to the Armenians, a. d. 335*, New York, 2008.

⁵ Cf. *Patrologia Graeca*, t. 33, 332A-1128A. Voir R. ZERFASS, *Die Schriftlesung im Kathedraloffizium Jerusalems* (Liturgiewissenschaftliche Quellen und Forschungen 48), Münster Westfalen, 1968; Alexis. J. DOVAL, *Cyril of Jerusalem, Mystagogue*, Washington, 2001; J. DAY, *The Baptismal Liturgy of Jerusalem*, Aldershot, 2007.