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Reconstructing Proto-West Caucasian:
From North Caucasian to West Caucasian via "Chinese" ?

In memory of Sergei Starostin and Auez Abdokov,
*outstanding historical linguists and friends.*

Abstract.
The comparison of Proto-West Caucasian (PWC) with East Caucasian (EC) languages proves that the late pre-PWC underwent a fundamental restructuring of its phonological, morphological and syntactic systems. Everything points to the fact that before the WC acquired the guise which is preserved by its modern continuations, it evolved from a completely different system, which was in essence isolating, with elementary inflection and with main grammatical roles and relations being expressed by lexical means, word order and probably also by apophony and tones. The subsequent changes led to the development of compounding and incorporation, which resulted in prefixing polysynthetic polypersonal agglutinative language type typical for modern WC. The main evolutionary shift from the NC dialect to the modern WC languages was thus from agglutinative to the analytical or isolating language-type (due to the near complete loss of inflection), and then from the analytical to the polysynthetic type. These changes may for some blur the genetic relationship between WC and EC. However, this relationship can be satisfactorily proven by the application of standard procedures of comparative-historical linguistics.

1. The West Caucasian languages.[1]

The West Caucasian (WC), or Abkhazo-Adyghean, languages constitute a branch of the North Caucasian (NC) linguistic family[2] and consist of the five languages: Abkhaz and Abaza (the Abkhaz sub-group), Adyghe and Kabardian (the Circassian sub-group), and Ubykh. The traditional habitat of these languages is the Western Caucasus, where they are still spoken, with the exception of the now extinct Ubykh.

(1)   Proto-West Caucasian

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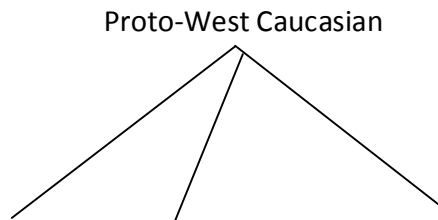
[2] The other branch is Nakh-Daghestanian or East Caucasian.

Circassian   Ubykh   Abkhaz

Typologically the WC languages represent a highly idiosyncratic linguistic type not occurring elsewhere in Eurasia.[3] In phonology, they are notorious for their huge consonantal inventories, reaching a maximum of eighty phonemes in Ubykh, and for their minimal vocalic contrasts: three vowels in Circassian and Ubykh and only two in Abkhaz and Abaza. In grammar, these languages are characterized, on the one hand, by highly developed verbal systems: extreme verbal prefixation, extreme polysynthetism, which involves the coding of up to five arguments in the verbal form. On the other hand, they have only elementary nominal inflection: Circassian has four cases, Ubykh has two, and Abkhaz/Abaza none at all. Abkhaz stands apart even among its sister-languages in expressing ergative alignment solely by the relative order of agreement markers and in possessing a category of nominal classes, absent in Circassian and Ubykh.

Despite marked differences such as those mentioned above, all five WC languages exhibit striking uniformity in their overall phonological and grammatical make-up, which is most certainly the result of their millennia-long contact in a *Sprachbund*-type relationship, which helped to preserve both archaic features, inherited from their ancestral language, and to develop common innovations.

Looking back into the history of these languages, both by means of internal reconstruction and by comparison with the distantly related East Caucasian (EC) languages, the common ancestor of WC languages, as far as we can judge, was developing into extremes unparalleled for the evolution of many other languages with a traceable history. In phonology, it became extremely consonant-centric, expanding the number of consonants to world records and at the same time limiting the role of vowels to a possible minimum. In morphology, it became extremely verbo-centric, the verbal system having expanded at the expense of all other word categories, making it possible to turn any originally non-predicate entity (nouns, adjectives, numerals, and adverbs) into predicates. On the other hand, the predicates too can be turned into substantives.

What I want to discuss in this paper is how a language like a Proto-North Caucasian (PNC) dialect, which ultimately gave rise to PWC, could come to such a strikingly different system from the maternal one, which, on the other hand, was more or less faithfully retained in EC.

2. A short history of WC and NC comparative research.
The genetic relationship between the WC languages was first noticed in the second half of the 18th century by the German scientist Johann Anton Güldenstädt (cf. his work published posthumously in 1834), according to whom Abkhaz and Circassian had one *Mutter*, i.e. common origin.[4] This opinion was repeated by George Ellis (1788: 18), who wrote: "The

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[3] But having striking typological parallels among some indigenous languages of North and Central America.
[4]"Die Abchasetische oder Abasaische und Tscherkessische Sprache haben eine Mutter sind aber so verschiedene Mundarten derselben, dass man die Verwandschaft nicht überall findet, sondern theils mühsam suchen muss. Meine Sprachproben zeigen dieses" (Güldenstädt 1834: 131-132).

Abkhas speak an original language, essentially different from all the known languages, though appearing to have a very remote affinity with that of the Circassians".

Güldenstädt's famous compatriot Peter Simon Pallas (1803), though initially having remarked about "some affinity" between Circassian and Abkhaz (Abasa) (p. 329), went on further in his book claiming that Abkhaz, despite some Circassian loanwords, has not the slightest resemblance to any European or Asiatic language.[5] The same erroneous claim is made for Circassian.[6] Pallas' misleading conclusion was echoed half a century later by the early Russian Caucasologist and the author of a Circassian-Russian dictionary, Leontij Liulie (1857): "The Circassians, i.e. Adyghes and Kabardians, speak the Adyghe language; while the Abkhazians – the Abkhaz language and both languages have not the slightest affinity between them."

Another celebrated German, Julius von Klaproth, although in his "Travels in the Caucasus and Georgia", published in 1814, he literally follows Pallas' words on the lack of relationship between Circassian and Abkhaz,[7] already in 1823 in his great work "Asia Polyglotta", on examining the data, he changed his view on the subject and united both Circassian and Abkhaz into one genetic taxon, West Caucasian (p. 129); cf. also Klaproth (1827: 55, 82). The insightful judgments of Güldenstädt and Klaproth based on the examination of word-lists of the respective languages were confirmed by the German orientalist Georg Rosen (1846), who noted the closeness of Abkhaz to Circassian. Finally, in the second half of the 19th century the great Russian Caucasologist Baron Peter von Uslar (1887: 82, 85), the author of the first Abkhaz grammar and of the first grammatical sketch of Ubykh[8], definitively asserted the genetic kinship existing between Circassian, Abkhaz and Ubykh.

In 1932 young Frenchman George Dumézil, following in Franz Bopp's footsteps in relation to IE languages, published a study of comparative morphology of the WC languages. Though this work became a valuable contribution to WC research, Dumézil's morphological comparisons were not supported by, or based on, a system of regular sound correspondences. Dumézil himself was aware of the methodological shortcomings of such a Boppian approach, which is clear from the foreword to his book (p. 8).

It was, again, Julius von Klaproth who in his "Asia Polyglotta" (1823: 124) asserted the connection between the WC and EC languages and postulated the existence of the North Caucasian family (which he called "Caucasian") as an independent genetic taxon. Klaproth also proposed the internal classification of the "Caucasian" family into West Caucasian, East Caucasian, and Central Caucasian ("Mittel-Kaukasier", i.e. Nakh), regarding the (North) Caucasian family as indigenous to the Caucasus and separating it from Kartvelian languages, which he saw as a genetically isolated taxon. He wrote: "Although the languages of the [North] Caucasian tribes significantly deviate from each other, and at first sight seem to be absolutely

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[5] "Ihre ganz fremde Sprache hat, wie aus dem *Wörterbuche aller Sprachen* zu ersehen ist (enige Tscherkessische Wörter ausgenommen), mit keiner bekannten Europäischen und Asiatischen Sprache die geringste Aehnlichkeit" (Pallas 1803: 335).

[6] "Ja vielleicht ist die Tscherkessische, mit keiner andern verwandte Sprache ursprünglich eine Art von Rothwälsch gewesen" (p. 352).

[7] "Their peculiar language has, with the exception of a few Tscherkessian words, no resembles to any European or Asiatic tongue" (Klaproth 1814: 247).

[8] "… я извлек для себя точное убеждение в родстве адыгского языка с убыхским и абхазским" (p. 85).

different, yet by a closer examination one does find undoubted family affinities and common points" (op.cit., 133).

A hundred years later after the publication of Klaproth's monumental work, the Russian philologist Prince Sergei Trubetzkoy, the founder of a new discipline, phonology, was the first to put the comparison of the NC languages, the WC included, on a solid scientific footing. In his 1922 article he wrote: "In order to prove a genetic relationship, it is necessary first of all to establish phonetic correspondences, to demonstrate their regularity, to single out the exceptions, and to scrupulously compare the grammatical forms" (p. 185). On the comparison of morphological elements only, Trubetzkoy (ibid.) remarked: "Linguists are convinced of the relationship of Greek, Sanskrit and Latin not due to more or less similar usage of the genitive or accusative cases, but due to the existence of consonantal correspondences between one or another phoneme of Greek and one or another phoneme of Sanskrit and Latin".

Having laid down rigorous methodological prerequisites for the comparative-historical study of the Caucasian languages, Trubetzkoy successfully demonstrated that methods, which were used to prove the relationship between the IE languages, many of which boasted an ancient literary tradition, are fully applicable to unwritten languages of the Northern Caucasus through the examination of phonemic correspondences between the modern dialects. Especially compelling were regular sound correspondences established by Trubetzkoy in the series of lateral fricatives and affricates.

(2)   *Correspondences established by Trubetzkoy (1922: 188-9) in WC laterals:* [9]

Circ	Ub	Abx		Circ	Ub	Abx	
L	*L*	*žʲ*	:	*bLə*	*bLə*	*bžʲ*	seven
				Lə		*žʲə*	meat, flesh
λ	*λ*	*šʲ*	:	*pλə*		*pšʲə*	red
				λə		*šʲa*	blood
λ'	*λ'*	*šʲ*	:	*pλ'ə*	*pλ'ə*	*pšʲ*	four
				λ'ə		*šʲ*	to kill (Circ, Abx); to die (Circ)

In all these examples Abx back sibilant fricatives are innovations in comparison to more archaic Circ and Ub lateral consonants. Similar correspondences in laterals were established by Trubetzkoy (op.cit., p. 189-197) within the EC group, and finally between the EC and WC branches. Though not all of his correspondences and reconstructions now seem to be correct (see Starostin's comments in Trubetzkoy 1987: 438-447), others are still valid (cf. Trubetzkoy 1922: 198-9):

(3)   Avar *anλ:-*, Archi *wiλa-*   :   Circ *bLə*, Ub *bLə*, Abx *bžʲ*   seven
        Andi *riλ:i*, Archi *aλ':*   :   Circ *Lə*, Abx *žʲə*   meat
        Archi *muλ':a-λ'*   :   Circ *məLə*   ice

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[9] *λ̆* – voiceless obstruent lateral affricate, *λ̆:* – strong voiceless lateral affricate, *λ̆':* – strong voiceless glottalized lateral affricate, *L* – voiced obstruent lateral fricative, λ – voiceless obstruent lateral fricative, λ' – voiceless glottalized lateral fricative; the sign *:* renders vocalic or consonantal length/strength, ᵛ - voice, ' - glottalization, ʲ - palatalization, ʷ - labialization.

From these correspondences Trubetzkoy drew the important conclusions that the presence of lateral consonants in both Avaro-Andi and in WC languages cannot be fortuitous, and that lateral consonants already existed in the NC proto-language (op.cit., p. 200). He emphasized that the great typological difference between EC and WC means that their genetic relationship is not self-evident and should be specially proven.

After a long period of very slow progress or effectively stagnation, the last decades of the 20th century witnessed a renewed interest in the NC comparative study, the major contributions having been made by the Kabardian scholar Auez Abdokov (1981; 1983) and two Moscow linguists Sergei Nikolayev and Sergei Starostin (NCED). The results of their work were two NC comparative dictionaries, based on their own variants of the NC reconstruction. Their work, which continued the traditions laid down by Trubetzkoy and Dumézil, despite a generally cool reception by many Caucasian linguists (both in Russia and abroad) became real milestones in the field of NC comparative studies, cf. especially the great "A North Caucasian Etymological Dictionary" by Nikolayev and Starostin (NCED). However, even with this undoubtedly outstanding progress, there still remains much to be done in working out many details and solving many remaining problems in the reconstruction both of the individual NC branches and of their ancestral language.

3. The Reconstruction of PWC.
At present there exist two versions of a PWC reconstruction: the one proposed by S. Starostin (1978; NCED) and another by the author of the present paper (Chirikba 1996).[10] Though these models differ in many details, they are both based on the following principles.

The PWC consonant system comprised three classes of phonemes: obstruents, resonants and glides. The obstruent system was based on at least a three-way contrast in the laryngeal features (voiced ~ voiceless ~ glottalized/ejective), and on a four-way timbre contrast (simple ~ palatalized ~ labialized ~ palatalized-labialized). The following scheme illustrates the paradigmatic diversity of the class of obstruents (column III refers only to stops and affricates; C denotes any consonant):

(4)   *Scheme of the PWC obstruent system.[11]*

I	II	III
C^v	$C^{[h]}$	$C^{\prime}$
C^{vj}	$C^{[h]j}$	$C^{\prime j}$
C^{vw}	$C^{[h]w}$	$C^{\prime w}$
C^{vwj}	$C^{[h]wj}$	$C^{\prime wj}$

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[10]Abdokov (1983)'s PNC dictionary also contains reconstructed PWC forms, though the author does not discuss the principles on which his proto-forms are based. The same can be said of the system proposed in Balkarov (1979: 80).

[11]It has already been pointed out (cf. Gamkrelidze&Ivanov 1984: 136-137 and especially Kortlandt 1995: 94) that this system finds its parallel in the system of PIE obstruents, which might suggest an ancient areal contact between the respective families.

In contrast to the paradigmatic richness of the class of obstruents, PWC resonants, glides and vowels were characterized by extreme simplicity.

It is probably worth commenting on some of the reconstructed consonant types. Though both palatalization and labialization occur in the world's languages, what is extremely rare is the phonemically distinctive combination of these features.[12] The necessity to reconstruct a set of labialized-palatalized obstruents, proposed by Starostin (cf. NCED 185, 189, etc.), is dictated by the need to account for two different sets of WC correspondences, when Circ and Abx labialized consonants correspond in one set of examples to Ub labialized phonemes, and in another set to Ub palatalized phonemes:

(5)

	CWC	CCirc		CAbx		Ub
(a)	$*C^w$	$*C^w$	:	$*C^w$	:	C^w
(b)	$*C^{wj}$	$*C^w$	:	$*C^w$	:	C^j

Labialized-palatalized consonants are reconstructed for all PWC obstruent series, with the exception of the labial one (though, unlike my reconstruction in Chirikba 1996, in NCED 184 the labialized-palatalized labials are also postulated). Being phonetically unstable, they were not preserved in any of the descendant languages, leaving different reflexes in different series.

4. The origin of the PWC phonemic system.

The phonological model of late PWC in essence did not differ substantially from that of its modern descendants. It was a purely "consonantal" language, with a huge qualitative and quantitative diversity of consonants and an elementary, bivocalic, "linear" system of vowels, distinguished only by the degree of openness. The reason for such striking disproportion between the class of obstruent consonants and the class of vowels is obvious: the timbre features, which in the majority of languages are normally in the property of vowels, in PWC were transposed to the consonants (cf. Starostin 1978; NCED 43, 73, 192; Abdokov 1983: 26-29). The origin of the hypertrophic WC consonant system can thus be explained as a result of a re-analysis of the PWC CV-sequences according to the following formula, with an intermediate stage $[C^vV]$, which reflects the phonetic, but not yet phonemic reality (the sign ^{v} in V^v denotes the vocalic timbre):

(6) $$/C + V^v/ => [CV^v] \sim [C^vV] => /C^v + V/$$

The four-fold timbre contrast in consonants ($C : C^j : C^w : C^{wj}$) can be regarded as a reflection of the original vocalic oppositions. Furthermore, the character of the vowel following the consonant (i.e. either a or $ə$) can serve as an indication of the quality of the original vowel.

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[12]Though they are quite possible on the phonetic level: labialized fricatives in Abkhaz, or dentolabialised consonants in isolects of Lezgi are phonetically palatalized. The rarity of a phonemically significant combination of palatalization and labialization can perhaps be explained by the insufficient articulatory and acoustical contrast between the simple labialized and labialized-palatalized phonetic types (cf. Chirikba 1991: 96, 102).

Consequently, the PWC sequences *Ca*, *Cə* reflect similar sequences in Pre-PWC, the sequence *Cʲa* reflects pre-PWC *Ce*, the sequence *Cʲə* reflects Pre-PWC *Ci*, etc. The following scheme shows these concordances in more detail:

(7)   Pre-PWC >   PWC >   PCirc, PUb, PAbx
        *Ca   *Ca   *Ca
        *Cə   *Cə   *Cə
        *Ce   *Cʲa   *Cʲa
        *Ci   *Cʲə   *Cʲə
        *Co   *Cʷa   *Cʷa
        *Cu   *Cʷə   *Cʷə

In two cases the reflexes in Ub are different from Circ and Abx:

(8)   Pre-PWC > PWC >   PCirc   PUb   PAbx
        *Cö   *Cʷʲa   *Cʷa   *Cʲa   *Cʷa
        *Cü   *Cʷʲə   *Cʷə   *Cʲə   *Cʷə

The following Pre-PWC vocalic system can be reconstructed on the basis of these correspondences: two timbre neutral, four rounded, two front rounded and two front unrounded vowels:

(9)
            *i   *ü   *u
            *e   *ö   *ə   *o
                            *a

As PWC does not seem to have had sequences *Tw*, or *Tj* (i.e. "obstruent (T) plus glide"), one may suppose that combinations of obstruents with (bilabial and palatal) glides, which in this respect behaved as vowels, also took part in the creation of labialized and palatalized obstruents:

(10)   Pre-PWC   >   PWC > PCirc, PUb, PAbx
        *Cwa   *Cʷa
        *Cwə   *Cʷə
        *Cwu   *Cʷə
        *Cwo   *Cʷa
        *Cja   *Cʲa
        *Cjə   *Cʲə
        *Cje   *Cʲa
        *Cji   *Cʲə

This scheme gives, of course, only theoretically possible sequences, which does not necessarily mean that all of them really existed. We arrive thus at a rather simplified pre-PWC

obstruent inventory, the paradigmatic variations of which can be depicted in the following scheme (column III refers only to stops and affricates, as fricatives lacked the glottalized series):

(11)   *The scheme of Pre-PWC obstruent system*

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\begin{array}{ccc}
\text{I} & \text{II} & \text{III} \\
C^v & C^{[h]} & C'
\end{array}
$$

5. Theories around the WC root structure.
The unusual and seemingly predominantly monosyllabic root structure of WC, which sets it apart from all other indigenous languages of the Caucasus, has always intrigued linguists (cf. already de Charencey 1862; Bálint 1904: xi, xv, xix) and caused some of them to look at isolating languages for typological parallels.

5.1. Hyacinthe de Charencey.
Already in 1862, at the dawn of comparative and typological studies, the French author Hyacinthe de Charencey (1832-1916) wrote about the same "primitive" monosyllabicity of Circassian and its sister-languages, on the one hand, and of Sino-Tibetan languages, on the other.[13] De Charencey, who tried to demonstrate not only the structural but also a genetic closeness of the indigenous Caucasian languages to Sino-Tibetan, was obviously an early precursor of modern proponents of the Sino-Caucasian hypothesis, even though the attachment of Kartvelian and Vietnamese to, respectively, North Caucasian and Sino-Tibetan families is discarded by modern research. As in the late Marr and Yakovlev, de Charencey regarded the monosyllabicity of WC and Sino-Tibetan root to be original and archaic and thought that the other Caucasian languages transformed their "primitive monosyllabic structure" into the "agglomerating" (i.e. agglutinative) one under the influence of IE and Turanian languages. He even tried to place the original homeland of the peoples belonging to the "monosyllabic family" in areas between Armenia and to the south of Bactria, i.e. Central Asia, and thought that later they were split in two by the Indo-Europeans invading from the north, who pushed one part of them to the gorges of the Caucasus and the other to the Himalayas, whence they then spread to China (p. 12-13).

5.2. Nikolay Marr.
The influential Russian philologist Nikolay Marr, the founder of the notorious "Japhetic" theory,[14] in different works vacillated, in his typical manner, between regarding Abx as a

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[13] "Entre toutes les langues caucasiennes, le tscherkesse et les idiômes de peuplades voisines semble se rapprocher du manière plus spéciale du tibétain et de dialectes indigènes du Népal. Dans ces deux groupes d'idiômes, nous rencontrons, en effet, la même structure primitivement monosyllabique, la même formation, à une époque postérieure, de quelques dissyllabes, par addition particule déterminatives placées d'ordinaire à la fin du mot." (p. 9-10).

[14] Marr claimed that human language went through successive structural-grammatical stages – from amorphous to agglutinative and finally to fusional, whereby each stage directly corresponded to concrete social-economical and political systems (from earliest communes to a class society).

product of an "extreme" evolution and, in later work, calling it an extraordinary archaic language. Thus, in his 1912 paper (reprinted in Marr 1938: 1-33) he was objecting to the opinions expressed by Uslar (1887: 37), who regarded Abx as representing the primaeval ("infantile") state of a language on the basis of richness of its verbal forms, arguing that "even if Abx developed sophisticated verbal forms, it nevertheless possesses a degraded morphology; the loss of morphological expressiveness it compensates by syntactic means, and … in general Abx demonstrates an extreme level of development" (Marr 1938: 2). The comparison of Abx monosyllabic roots with Kart polysyllabic roots suggested to him that Abx roots were historically worn, having lost final consonants and that monosyllabicity was thus of more recent origin (ibid: 4, 27). He saw the evolution of Abx in the weakening of final syllables, which led to the loss of the original case endings, and in the increased role of prefixation, specifically noting the proclitization of originally enclitical pronominal particles (ibid: 5-6).

In his later work Marr, however, departed from these views and started to regard Abx as frozen "on an exceptionally archaic stage of development".[15] Marr's early conclusions, though based on the comparison of Abx with unrelated Kart languages, were nevertheless productive, presenting the WC monosyllabicity not as a static and frozen remnant of the distant glottogonic past but rather as a result of relatively later evolution from more complex structures.

5.3. Nikolay Yakovlev.
The other great Russian Caucasologist, Nikolay Yakovlev, following Marr's glottogonic "theory", spoke of the amorphous stage as the most archaic speech-form through which all human languages passed. He claimed that unlike other languages, the WC languages still retained vivid vestiges of that ancient "amorphous" stage. Note that the term "amorphous" was then used for the language type we now normally call "isolating", and indeed, Yakovlev's description of the "amorphous" structure (as in Yakovlev&Ašxamaf 1941: 7) by many parameters conforms to an isolating language-type.

In his grammar of Adyghe, written together with Ašxamaf (1941), Yakovlev points out the following vestiges of the amorphous stage in modern Adyghe (cf. pp. 11, 208, 211, 241, 252-3, 255, 284-5, 381-2, 404, 414):

1. The predominance of monosyllabic roots with consonant onset and vocalic finale (CV) as the primary root-type.

2. A syllable is often equal to a morpheme ("seme"), as typically in the following example: *sə-λ'ə-źə-ś'ʷ* 'I-man-old-good = I am a good old man'.

3. Many modern affixes can be traced back to independent roots/words.

4. Each word can become a verb or a substantive, as the reflection of the period when no formal grammatical classes of words existed.

5. The preservation in certain constructions of "amorphous" forms of nouns, which lack any inflection for number or case.

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[15]"[Мы застаем] абхазский на исключительно древней стадии развития" (Марр 1938: 381). On the eastern extreme of Asia, Marr (1936: 6) cited Chinese as being of "absolute typological antiquity" ("Китайский язык, его абсолютная типологическая древность и относительные эволюционные новшества"). Marr (1933: 243) wrote: "From this formal point of view Chinese stopped at that stage of development, when in the language of humanity there were no service [i.e. grammatical] forms, the relations between words were determined not by endings, as in Russian, but by word order. Such a phenomenon we find in the West, in the Mediterranean world, in a certain measure only on the eastern Black Sea coast in Abkhazia and in the eastern part of the Mediterranean itself, in Egypt".

Yakovlev describes the earliest stage of the "amorphous" structure of Adyghe and the way it evolved into the polysynthetic one (pp. 209, 237-8, 380-1, 406, 408):

a) The "amorphous" stage.
1. In the ancient period the language did not distinguish vowels (monovocalism).
2. The root had a CV-structure and was equal to a phoneme, a syllable, a morpheme, and a word: it was in fact a unitary complex, a "syllabo-phoneme", comprised of a variable consonantal initial and an invariable (mono)vocalic finale.
3. The words did not belong to concrete grammatical classes and lacked any inflection; their connections within the sentence were expressed by their relative order, intonation, accent, etc.

b) The evolution from "amorphous" to polysynthetic structure.
1. The need to create new words stimulated the proliferation of consonants, which explains the current huge consonantal inventories; in other words, the creation of new consonants served as the derivational means.[16]
2. From monovocalic monosyllabic words then evolved monosyllabic words with the distinction of two vowels.
3. Due to the growing need to create new words, compounding began to develop, hence the development of incorporation.
4. The development of agglutination on the basis of incorporation.
5. Finally, the development of polysynthetism, which, according to Yakovlev, is a variety of the agglutinative stage.

On the latter process Yakovlev wrote: "Historically the Adyghe predicate-verb is a whole sentence fused in one word. This fusion occurred from monosyllabic amorphous words/roots, which in many cases still can be separately observed in Adyghe. […] A similar language structure we find, except for Adyghe, also in Kabardian, Abkhaz and Abaza in the Caucasus and in many American Indian languages. Languages with such structure are called scientifically polysynthetic (multicompositional), incorporating (including) or predicative. But in the WC languages we have a late stage of polysynthetism, at which incorporation is preserved only as rare remnants" (p. 23).

Even after the official condemnation of Marr's Japhetic theory, in his later grammar of Abx finished in 1951 (and published only in 2006!), Yakovlev still speaks of vestiges of the amorphous stage in the evolution of Abx. He writes (on p. 144-145): "… the majority of current polysyllabic Abx words can be analysed into their component parts – the primary words/roots. From this we can suppose that in some more or less distant epoch the language, from which Abx evolved, consisted of monosyllabic words/syllables. These words/syllables did not posses then any formal particles, either prefixes or suffixes. They remained unchanged in the sentence. All connections between words and their forms were expressed only syntactically, i.e. by the placing of words in the sentence, intonation, accent, gestures, real speech situation, etc. Such a language structure is usually called amorphous, isolating or monosyllabic… We find traces of the same structure elsewhere in the Caucasus (for instance, in the Circassian languages) and in other parts of the world (for example, in the majority of the Sudan languages in Africa, in the languages of Central America, in Chinese). One can even say that at a certain period of the development of society, all languages must have had such a structure. Only in Abkhaz and Circassian do we find it as a more or less preserved vestige of the past".

Yakovlev's theory of the ancient character of WC monosyllabicity was resolutely rejected by Trubetzkoy (1930a; reprinted in 1987: 281-282), who, on the basis of correspondences between WC and EC, argued about the secondary nature of many WC monosyllabic roots. Trubetzkoy was certainly right in rejecting the idea of the primaeval monosyllabicity of WC roots. But if we put aside Yakovlev's glottogonic approach, his general idea of the evolution of the formerly "amorphous" (i.e. analytical or isolating) structure of the

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[16]Yakovlev (op. cit., p. 404, fn. 1) compares this situation with that in Chinese, where, according to him, musical tones developed together with changes in the semantics of the words.

ancient WC languages into a polysynthetic language type, as we know them today, seems rather productive.

5.4. Alexander Genko.
Yakovlev's colleague, Alexander Genko, also spoke of the residually preserved monosyllabicity of the main word-stock of Abkhaz/Abaza and of the residual analyticity of their linguistic structure, when all grammatical relations were expressed by lexical words (Genko 1955: 78; 1998: 377). Genko (published posthumously in 1998: 394) thought that the agglutinative structure of Abx evolved on the ruins of the former monosyllabic one. But he did not share (late) Marr's and Yakovlev's glottogonic views on monosyllabicity. He emphasized that the predominance of monosyllabic roots cannot be used as a proof of the archaic or primitive period in the evolution of Ab(x), as the comparison with other Caucasian languages demonstrates that both monosyllabicity and polysemy of Ab(x) words can in a number of cases be the result of later simplifications and the falling together of originally more complex and differentiated sound combinations (Genko 1955: 78).

5.5. Present-day researchers.
Modern researchers (Abdokov, Kumakhov, Starostin, Chirikba) agree that the prevalent PWC root structures were C(C)V and CVCV. I shall return to the problem of the PWC root structure in paragraph 11 below, after I discuss the evolution of Pre-PWC into PWC.

6. From North Caucasian to West Caucasian via isolating stage?
There is little doubt that at a certain period of its history, Pre-PWC, which originally in many respects resembled the related PEC, was subjected to a drastic restructuring at the phonological, morphological and syntactic levels. In phonology, this led to the development of an extensive number of consonants and the reduction of vocalic contrasts to a binary system. In morphology, the restructuring involved the elision of many syllables and the loss of many resonants and laryngals, which created a significant number of roots of the structure (C)CV. Though relic disyllabic roots were preserved, many of them were phonetically simplified: from C(C)VC(C)V to C(V)CV. The reduction of vocalic contrasts (from at least eight to only two) led to a substantial increase in the number of homophonous morphemes.

The resulting language represented a rather exotic linguistic structure for this part of the world, looking more like Chinese or Vietnamese, than a moderately agglutinating EC-type language. What are the reasons for postulating pre-PWC as an analytical or isolating language? These are as follows:

(12)   in phonology: a large number of monosyllabic roots of the CV-structure;
                          abundance of homonymic roots;
                          the presence of a tonal system;[17]
                          the interdiction of consonant clusters.

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[17]Cf. the tonal hypothesis of the origin of WC dynamic accent system proposed by A. Dybo (1989); cf. also NCED 192 and Chirikba (1996: 35-37).

in morphology:	a high degree of analyticism;
	elementary, if any, inflection;
	the paucity of derivational means;
	the lack of formal distinctions between a word and a morpheme;
	the lack of formal distinctions between verbs, nouns and adjectives.
in syntax:	the expression of syntactic relations by fixed word order.

NC, as far as we can judge, was a language with a rather moderately developed inflection and a more expressed analyticism, whereby a number of grammatical functions were expressed by separate words. This predisposition to analyticism inherent in the proto-system was developed to the extreme in the western branch of NC, but remained only a tendency in its eastern branch, which preserved a balance between synthecitism and analyticism.

7. EC-WC correspondences in affixes.

Although the (mainly) isolating or analytical stage in the history of the WC languages seems to be quite plausible, Pre-PWC might have preserved at least partially some old grammatical morphemes, which can be judged from the fact that WC and EC do in fact share, beside lexical roots, also a number of affixal morphemes. Of the comparable WC-EC correspondences in affixes the following ones can be mentioned:[18]

(13)	PWC	PEC	
	*mə	*ma	prohibitive/negative particle
	*čə- (PAbx)	*č[ŭ]	reflexive pronoun/affix
	*-gʲə	*-gi	enclitic particle 'and'
	*-ra (PCirc)	*-ra	enclitic particle 'and'
	*-ba (PAbx)	*b-	suffixal marker of numerals for non-human referents (PAbx), prefixal marker denoting animals and some inanimate things or phenomena (PEC)
	*-ara (PAbx)	*-ar	plural suffix
	*-la	*-l(a)	durative suffix
	*-n (PAbx)	*-na	past tense suffix
	*-m (PCirc)	*-m	ergative/oblique (PCirc) or oblique case (PEC) suffix
	*-da	*-d(a)	optative suffix
	*-rə (PCirc)	*-r(a)	participial or converbial suffix
	*-gʷʲa	*-gwa	adverbial suffix
	*cʲə- (PAbx)	*-ci	comitative affix

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[18] Throughout the paper PWC reconstructions are mine, PEC ones are in Trubetzkoy (1987: 273), Abdokov (1983: 67, 88; 1981: 88, 91), NCED (347, 797), Alekseev (1988: 175, 192, 193, 195, 197, 198; 2003: 108-9, 228, 231), and Starostin (2007).

*-na/ə	*-n	locative suffix (PWC),[19] genitive suffix (PEC)
*-sa	*-sɛ	instrumental (PEC), adverbial/participial (PWC) suffix
*-da	*-di	directional/locative particle (PWC), locative suffix (PEC). [20]

In a number of these cases we can probably speak of originally separate particles (as in the case of coordinating conjunctions), floating enclitics (as the negation marker, which even synchronously can function in WC either as a prefix or a suffix) or even independent words, like pronouns (cf. the reflexive affix, the marker of ergative/oblique case), which only later became incorporated in both branches into nominal or verbal paradigms. The fact that EC orientational case suffixes, which express localization, correspond etymologically to WC orientational preverbs, indicates the derivation of both from independent adverbials or similar classes of independent words (cf. Abdokov 1983a; 1983: 75; Alekseev 1988: 174). But it can also be that some of these cognates could have been affixal morphemes already in NC and thus inherited by both branches.

Among the few genuinely inflectional affixes common to EC and WC were perhaps old class and plurality markers[21] (see above; cf. also NCED 85; Abdokov 1981: 62-3, 66-76). Old class markers are presumably traceable, e.g., in some WC numerals:

(14) PNC   PWC
      *q'Hwā   -   *d-Gʷə/a   'two'
      *ʔĕrŁ:ɨ[22] -   *b-Lʲə   'seven'

Besides, they are still preserved in Abx numerals (PAbx *-ba suf. of non-human class in numerals, as in *ʕʷə-ba 'two', *pš̌ə-ba 'four', etc.) and probably in the human feminine pronoun *ba 'thou'.

8. From Early to Late Pre-Proto-West Caucasian.

In order to show the way in which the PWC evolved, it is convenient to place the stages of its evolution on a diachronic plane. The following major stages of the evolution of PWC can be pinpointed:

(15)   Early Pre-Proto-West Caucasian =>

                     Late Pre-Proto-West Caucasian =>

                              => Proto-West Caucasian

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[19] Probably connected with verbal root *na/ə 'be/remain somewhere' (cf. Chirikba 1996: 368); but cf. also Abdokov (1981: 84-5) and Alekseev (2003: 108).

[20] The last three correspondences are also mentioned in Starostin (2007: 480).

[21] The fact that WC languages lack common plural markers, and probably only Abx preserves the old NC pluralizer, while Ubykh lacks any nominal pluralizers, might indicate that the process of the loss of old inflection was continued even after the split of CWC into individual languages.

[22] Cf. PNax *worλ, Dargi *warɣ-, Lezgi *u̯irλ:ɨ, which, according to NCED (247), also reflect, like the WC form, an old NC class marker *u̯-.

It seems that the early Pre-Proto-West Caucasian dialect was characterized by the following features, which were mainly in line with its ancestral PNC system:

(16)   a moderately synthetic language with a tendency to analyticism
        a moderately developed nominal and verbal inflection (including Ablaut)
        a relatively free word order
        a moderately developed vocalism and well developed consonantism

It is during the late Pre-Proto-West Caucasian period that the large-scale restructuring started to occur, leading to "catastrophic" changes in phonology and grammar. These changes included the following processes:

(17)   in phonology: the elimination of (nearly) all clusters
                               a partial loss of resonants and laryngals
                               the loss of many (though not all, and mainly final) unstressed syllables
                               the shift of various root structures to CVCV and C(C)V
                               the shift of vocalic timbre onto consonants, leading to the reduction to a possible minimum of vocalic contrasts and to a significant increase in the number of consonants
                               the development of a tonal system in the place of lost consonants or syllables

        in morphology: the loss of much of the old inflection and the development of analyticism
                               the weakening of the nominal class system

        in syntax: the increased importance of word order, which was to become the main means of expressing syntactic relations (on the background of the fading cross-referencing nominal class system).

9. The Late Pre-PWC changes in the phonological system.

The comparison with EC cognates shows that PWC underwent a radical simplification of its root structure. The processes involved were the loss of certain consonants (mainly laryngals and some resonants), the loss of whole (unstressed) syllables, and the simplification of clusters, by dropping one of the consonants, or, less frequently, by breaking the cluster by a vowel. These processes have led to two predominant PWC root structures: CV and CVCV. The simplification processes are demonstrated by concrete examples below.

9.1. The loss of laryngals (H → ø).[23]

(18)   PNC   PWC

	PNC		PWC	
	*cHə	–	*za/ə	'one'
	*q'Hwā̄	–	*d-Gʷ ə/a	'two'
	*ƛHě	–	*ƛə	'three'
	*ħenš:wĭ	–	*nəšʷə	'soil, clay'
	*GwinʔV	–	*ʕʷəna	'village' (PEC), 'house' (PWC)
	*ħq'wə:nə:	–	*qʷ/Hʷənə	'mouse, rat'
	*ʔăms:a	–	*psa/ə	'soul'

9.2. The loss of resonants (R → ø).

(19)

	PNC		PWC	
	=iwƛ'Ě	–	*ƛ'a/ə	'to die' (PEC), 'to die, kill' (PWC)
	*ʔwĭlʔi	–	*b-la	'eye'[24]
	*cɨˇlħV:	–	*ca	'tooth'
	*ʒ:wăhrī	–	*c'ʷa	'star'
	*räˇƛ':ɨˇ	–	*Lʲə	'meat, flesh'
	*ʔĕrŁ:ɨˇ	–	*b-Lʲə	'seven'

In many of these cases the loss of the resonants can be explained by the tendency to simplify (like in 'die', 'eye', 'seven') or delete clusters (like in 'tooth', 'star').

9.2.1. In other cases resonants are preserved:

(20)

	PNC		PWC	
	*GwinʔV	–	*ʕʷəna	'village' (PEC), 'house' (PWC)
	*ħenš:wĭ	–	*nəšʷə	'soil, clay'[25]
	*ħq'wə:nə:	–	*qʷənə	'mouse, rat'
	*wɨ:cV:	–	*wəcə	'grass'
	*u̯o	–	*wa	'thou'[26]

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[23] The PNC and PEC reconstructions are from NCED. Not all reconstructions in NCED can be accepted without reservations, but here I am more concerned with showing the general lines of the evolution of PWC, rather than with dwelling into the discussion of details of the reconstructed system.

[24] The initial bilabial in WC forms (CAbx *(b)la, Ub bLa 'eye') can reflect either an old NC class marker (cf. 'seven' above), or be the retention of the old bilabial of the NC root; for a similar development of the initial consonant cf. Ud pul, Xin pil 'eye'.

[25] Acc. to NCED 513, the preservation of n in WC in this root can be explained by supposing the presence of an original vowel between *-n- and *-š-, lost in PEC; cf. also Abdokov (1983: 99), who reconstructs PNC *našu-.

[26] Note that NCED makes a distinction between the bilabial glide u̯ and the resonant w. Cf. the explanation in NCED 42.

9.3. The fall of syllables (PNC *(CC)VC(C)V → PWC *CV).
In many cases whole syllables were dropped, leading to the emergence of many monosyllabic roots. By and large, this involved the initial syllables, which can indicate that they were unstressed:

(21) $(C)V(C_1)C_1V_1 \rightarrow C_1V_1$

PNC		PWC	
=iwƛʼĚ	-	*ƛʼa/ə*	'to die' (PEC), 'to die, kill' (PWC)
=ămcʼĚ	-	*cʲa*	'to know'
jə:mco:	-	*c:ʷə*	'ox, bull'
němʒ:ĭ	-	*cʲa*	'louse'
räˇƛʼ:ɨˇ	-	*Lʲə*	'meat, flesh'
hɨ[n]čwĭ	-	*čhjʷə*	'horse'
jĕrkʼwĭ	-	*gʷʲə*	'heart'
ʔwɨlʔi	-	*b-la*	'eye'

In fewer cases, it was final (probably unstressed) syllables that were lost:

(22) $C(C)V(C_1)C_1V_1 \rightarrow C(^c)V$

PNC		PWC	
swĕrho	-	*ž̌ʷʲə*	'old'
ʒ:wăhrı:	-	*cʼʷa*	'star'
śwänɨˇ	-	*sʷa/ə*	'year'
cɨˇlh̃V:	-	*ca*	'tooth'

Incidentally, late PWC clusters were also syllable-initial, which can indicate the place of the stress – on non-initial syllables.

9.4. Elimination of PNC clusters (*CC → *C).
It seems that Pre-PWC did not tolerate consonant clusters at all (as the comparison with EC cognates shows), and all PWC clusters are innovations. The CCV structure can have two sources: the prefix C(V) + root CV => CVCV = CCV; or the original CVCV roots becoming CCV due to the elision of the vowel of the initial syllable, probably in the unstressed position.

All PNC clusters were transformed into single consonants by means of the elision of one of the consonants:

(23) $C(C)VC(C)V \rightarrow CVCV$:

PNC		PWC	
tʼ ŭmhV	-	*tʼa/əma*	'marrow; kind of fruit' (PEC), 'soft fruit' (PWC)
mĕlcʼ:ĭ	-	*bəz/źa*	'tongue'

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*ʕwinʔV	-	*ʕʷəna	'village' (PEC), 'house' (PWC)
*ħq'wə:na:	-	*qʷənə	'mouse, rat'

9.4.1. In some cases, old clusters were apparently not deleted, but split by a vowel, resulting in pleophonic CVCV structures:

(24)	PNC	<	Pre-PWC	PWC	
	*ħenš:wĭ		*nšwə >	*nəšʷə	'soil, clay'
	*Hrēmq'ĭ		*mʕʷʲa >	*məʕʷʲa	'road, way'

But in a number of similar cases the nasal in the cluster is being dropped:

(25)	PNC	<	PWC	
	*=ămc'Ě	-	*c'ʲa	'to know'
	*němӡ:ĭ	-	*c'ʲa	'louse'
	*jə:mco:	-	*c:ʷə	'ox, bull'

Given this pattern, one can surmise that the vowels in the PWC examples in (24) can be regarded as reflecting the original situation, while in PEC forms the vowels were lost resulting in a cluster (cf. such a suggestion in fn 26 above). This would mean that the PEC form might be reconstructed with an intermediate vowel: *ħenVš:wĭ, *HrēmVq'ĭ, which is especially plausible in the word for 'road', cf. such forms as PNax *nīq' and PAvar-Andi *miq':i, which also suggest an original form with *plene* vocalisation.

Consequently, the PWC etymon for 'moon' (*məӡa < PNC *wămc':ŏ),[27] should be explained as being derived not from the final part *-mc':ŏ with the subsequent split of the cluster by the vowel, but rather from *wăc':ŏ > *wəӡa (after the drop of the cluster-initial nasal), with the shift *w- > *m-, which can be explained by the nasalizing influence of the dropped -m-.

In the word for 'soul', PNC *ʔăms:a, if this form is correctly reconstructed,[28] the pattern of dropping the nasal present in a cluster deviates from what we have seen in (25): Starostin and Nikolayev reconstruct here PWC *pəsA 'soul'. There could be three possible explanations for this: (a) to suggest that the initial syllable was unstressed and thus dropped (see (21) above); (b) that we should consider in PNC a plene form *ʔăməs:a, with the drop of the initial syllable and the subsequent shift *m- > *p- (*məs:a > *msa > *psa), or (c), we should regard the cluster in PWC as the retention of the PNC combination, which is less likely, though cf. Hattic

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[27] I am not sure that here the PNC initial consonant should not be reconstructed as *b- (as done by Abdokov 1983: 89), rather than *w-, like in NCED. Incidentally, like in the root for 'road', Avar *moc'* 'moon' shows a parallel to WC development of the initial oral to a nasal.

[28] Chechen *asar* 'inspiration', adduced in NCED 243 for the reconstruction of this etymon, should be abandoned as a Turkish loan (Turkish *asar* 'works, books written, oeuvres', pl. from *eser* > Arabic), though other EC cognates cited by the authors must be genuine, e.g. Axvax *as:i* 'breath' (cf. CAbx *psə-pə 'breath'), Tsez, Hinux, Xvarshi, Inxokvari *as:*, Bezhta *has:* 'sky, cloud, fog', Tabasaran *ams* 'raincloud', Agul *ams-ar*, Rutul *asɨj*, Udi *haso* 'cloud' (cf. CAbx *psə-thºa 'cloud'). Unlike NCED, I would add here also PNax *sa 'soul' (cf. otherwise in NCED 961, where the Nax word is connected with PWC items for 'to get tired', 'to breathe', 'to die'; cf. on this Chirikba 1996: 251, 257, 258). Abdokov (1983: 185) prefers to connect only PWC and PNax roots for 'soul', adding here also Avar *sunt'i-ze* 'to smell', which however should be treated separately, as rightly done in NCED 961.

psun 'soul' (Chirikba 1996: 424), which might testify to the antiquity of this particular cluster in WC.

9.4.3. The transformation of *Cw clusters into labialized consonants (*Cw → *Cʷ).
In cases of combinations *C+w*, the latter turned into monophonemic labialized consonants:

(27)   PNC   PWC
*mīλwǍ	-	*məλʷʲa	'sun, day' (PEC), 'day' (PWC)
*śwänĭ	-	*sʷa/ə	'year'
*ʒ:wăhrī	-	*c'ʷa	'star'
*GwinʔV	-	*ʕʷəna	'village' (PEC), 'house' (PWC)
*q'Hwā̌	-	*d-Gʷa	'two'
*ħq'wə:na:	-	*qʷ/Hʷənə	'mouse, rat'
*henš:wĭ	-	*nəšʷə	'soil, clay'
*swĕrho	-	*ǯʷʲə	'old'
*źwĕ	-	*sʷa	'you (pl.)'
*jĕrk'wĭ	-	*gʷʲə	'heart'
*ħɨ[n]čwĭ	-	*čʰʲʷə	'horse'

9.4.4. In some cases the labial component was lost altogether (*Cw => *C):

(28)   PNC   PWC
*mä(r)λ':wä	-	*məLʲə	'ice'
*maGwV:	-	*maqa	'voice, sound, word'

10. Parallel simplification processes in EC languages.
It would be wrong to suggest that it was only WC that underwent significant evolution in the phonetic shape of words. The EC languages too underwent considerable changes, which often paralleled their evolution in WC. I adduce here only a couple of relevant examples, demonstrating parallel evolution in some individual EC languages and in WC:

(29)   PNC *Hrēmq'ĩ* 'road, way'   > PWC *məʕʷʲa*, cf. PNax *nīq'*, PAvar-Andi *miq:'i*
             PNC *=ămc'Ĕ* 'to know'   > PWC *c'ʲa*, cf. PTsez *=ãc'-* ('to see, look')
             PNC *cɨˇlħV* 'tooth'   > PWC *ca*, cf. PNax *ca*
             PNC *GwinʔV*   > PWC *ʕʷəna* 'home', cf. PTsez *qʷɨn* 'farmstead',
                                                    PHunzib-Bezhta *qun* 'village'
             PNC *ʒ:wăhrī* 'star'   > PWC *c'ʷa*, cf. PTsez *cʷã*, Lak *c'u-ku*
             PNC *cHə* 'one'   > PWC *za/ə*, PAvar-Andi *ci-*, Lak *ca*, PDarg *ca*,
                                                         PLezgi *s:a*, Xin *sa*

11. PWC root structure.
Once the changes had occurred, the basic resulting root structures – C(C)V and CVCV – became extremely stable and in general probably did not change much over the period of several

millennia, from the late CWC period up to our own time. In this sense, one can accept Yakovlev's remark that the WC roots as "products of the amorphous stage, represent petrified, and a not developing further historical remainder" (Yakovlev&Ašxamaf 1941: 216). The only process that was still active in late WC was a strong tendency to further transformation of the remaining CVCV roots, under the influence of (final) dynamic stress, into CCV. This can be demonstrated by comparison of some Circ, Ub and Abx roots:

CVCV	>	CCV	
Ad *maxᵒa*, Ub *məsᵒa*	–	Abx *a-mš* 'day'	
Ad *maʒa*, Ub *məʒa*	–	Abx *a-mza* 'moon'	
Ad *məsʲa*, Ub *məšᵒa*	–	Abx *a-mšᵒ* 'bear'	
Ub *ɣəba*	–	Abx *a-ɣba* 'ship'	

The same process was active in Abx, as can be seen from Abkhaz dialects:

Tsab *a-baga*	–	Bz, Abzh *a-bga* 'wolf'
Sadz *a-bana*	–	Bz, Abzh *a-bna* 'wood'
Sadz *a-šᵒaq'(q')a*	–	Bz *a-šᵒq'ᵒə*, Abzh *a-šᵒq'(ᵒ)ə* 'letter, book'

However, in nominal roots this process was not completed and many PNC disyllabic roots were preserved, despite the elimination of (nearly) all old clusters.

11.1. The preservation of old CV roots.
A number of PWC roots were monosyllabic already in PNC; they include pronouns, deictics and some numerals:

(30)	PNC		PWC	
	*zō̄	–	**sa*	'I'
	*źwĕ	–	**sʷa*	'you (pl.)'
	*u̯ō̄	–	**wa*	'thou'
	*cHə	–	**za/ə*	'one'
	*q'Hwā̄	–	**d-Gʷə/a*	'two'
	*ƛHĕ	–	**ƛə*	'three'

11.2. The preservation of old CVCV roots.
Many PNC disyllabic roots were preserved, despite the elimination of old clusters:

(31)	PNC		PWC	
	*mī̆ƛwĂ	–	**məƛʷʲa*	'sun, day' (PEC), 'day' (PWC)
	*t'ŭmhV	–	**t'a/əma*	'marrow; kind of fruit' (PEC), 'soft fruit, peach' (PWC)
	*q'ămq'wă	–	**q'ʷaq'ʷa*	'knee, leg-bone' (PEC), 'back' (PWC)
	*mĕlc':ĭ	–	**b(ə)z/źa*	'tongue'
	*GwinʔV	–	**ʕʷəna*	'village' (PEC), 'house' (PWC)

*ħnəːqʼːwəː	–	*qʷ/Hʷənə	'mouse, rat'
*wɨːcVː	–	*wəcə	'grass'
*mä(r)ƛʼːwä	–	*məLʲə	'ice'
*maGwVː	–	*maqa	'voice, sound, word'

11.3. The dominant root structures.

The counting of various PWC root structures as presented in NCED reveals the following ratio:

(32)
VCV	-	10
CV	-	289
CCV	-	29
CVCV	-	289
all PWC roots	-	684

These data show that:

(a) PWC had relatively few roots with initial clusters and even fewer roots with initial vowels.

(b) The number of roots of the CVCV structure is in essence equal to that of the CV structure, which is rather unexpected, given the traditional view of the predominance of monosyllabic roots in WC. It was noted already by Trubetzkoy (1987: 281) that some WC correspondences are disyllabic (esp. many nouns), and this disyllabic structure should be reconstructed for the NC epoch.

Besides, the comparison with EC shows that in WC many currently monosyllabic roots were originally disyllabic and were shortened as the result of the syncope of the (unstressed) vowel of the initial syllable, thus giving rise to new PWC clusters.

(33) * CVCV > *CCV:

PNC		PWC		CWC	
*laqːū	>	*tVqʷa	>	*tqʷa	'ash'
*bŭƛʼV	>	*pʼVƛʼa/ə (or *bVƛʼa/ə)	>	*pʼƛʼa/ə	'breast'; 'handle'
*büːnŁːe	>	*pʼəƛʼə (or *bəƛʼə)	>	*pʼƛʼə	'four' (in PEC: 'eight')

The early PWC had thus a statistically greater number of disyllabic than monosyllabic roots. This means that Yakovlev's theory about the original monosyllabicity of WC roots should be rejected (cf. Trubetzkoy 1987: 281-282; cf. also Abdokov 1981: 30). Besides, a great number of disyllabic roots in PWC must dispel usual objections to the possibility of establishing sound correspondences between WC and EC cognates because of the perceived monosyllabic character of the former.

12. Factors triggering the evolution of WC.

The triggering factors for the radical or "catastrophic" restructuring of a language's structure can be the development of certain features inherently present in the system of the maternal

proto-language in the conditions of geographic isolation from sister languages and the intensive contact with neighbouring allo-structural idioms. This brings us to the question of the reasons for the strikingly peculiar development of WC as compared with its sister EC.

12.1. The Law of Rising Sonority.
One of the driving forces for the phonetic changes in PWC was, according to Abdokov (1981), a tendency to rising sonority (or the law of open syllable), which meant that final consonants were dropped and the syllable structure became uniformly (CV)CV, which led to a near-complete loss of old (inflectional and derivational) morphology, which was mainly suffixal (cf. Marr's early ideas presented above). Besides, it led to the appearance of a great number of monosyllabic homophonous roots/words. These latter had to have been distinguished by means of tones (cf. Dybo 1989 on the WC tonal hypothesis), risen in place of the lost consonants (especially laryngals and resonants). The mono- or disyllabic root became equal to a morpheme and a word.

In the condition of the fading system of nominal classes (which however managed to survive in Abx under another guise, cf. Abdokov 1981: 54-65), the main means to express syntactic relations between isolated and inflection-less words had to become fixed word order (see Chirikba 2010). It is possible that ablaut also played a role, serving, on a par with tones, to distinguish grammatical forms. In short, everything points to the fact that Pre-PWC became an analytical or isolating language.

12.2. The law of rising sonority helps to explain rather well the mechanism of the revolutionary "perestroika" in the word structure, as well as profound changes caused by this process in the phonemic, prosodic, morphological and syntactic systems of the early WC proto-language. It is more difficult to say, however, what triggered this process in the first place – the internal development of some of the tendencies already inherent in the NC proto-language or, more probably, language contact, or perhaps the combination of both.

As noted by R. Beekes (1995: 71), "languages which are isolated, and depend for change on internal factors only, undergo little change. On the other hand, languages may undergo rapid change within a relatively short span of time, especially in times of social and political upheaval. It appears therefore that the influence of other language systems remains the single most important factor underlying sound change".

In fact, the intensive language contact as the main factor responsible for the fundamental restructuring of an early PWC dialect was suggested already by Trubetzkoy (1930: 111), who wrote that such deep structural deviations of WC from EC, as, for instance, the atrophy of the WC vocalic system, could be understood only by supposing a language mixture. According to him, "WC could have thus emerged through a mixture of an idiom very close to PEC with some other language". Proceeding from this, we can probably speak in terms of creolisation of the early PWC dialect, which could happen as a result of migration, either of the speakers of the early PWC dialect to a new habitat which had an older population, with which they then mixed, or, vice versa, of speakers of another language who moved to the territory occupied by the speakers of early PWC.

In any event, it is quite obvious that these developments in PWC took place in the condition of its geographical isolation from speakers of the sister-PEC dialect, which in the

main remained quite conservative and unresponsive to external pressure, which may indicate that it was developing in a habitat geographically more isolated from external influences. Pre-PWC was, as it seems, on the contrary, exposed to intensive language contact, which resulted in the above-mentioned significant re-structuring.

However, after it eventually evolved, having acquired nearly all the features of its modern make-up, late PWC (= CWC) remained stable over a considerable period of time, in effect up to our time. This might, again, indicate that CWC was not exposed to significant external linguistic influences or contacts, and the only determining factor in its slowed evolution was close contact between its separated dialects in a virtual *Sprachbund*-type situation, which helped form the amazingly uniform systems of their modern descendants.

13. Conclusions.
The comparison of PWC with EC languages proves that the late pre-PWC underwent a fundamental restructuring of its phonological, morphological and syntactic systems. Everything points to the fact that before the WC acquired the guise which is preserved by its modern continuations, it evolved from a completely different system, which was in essence isolating, with elementary inflection and with main grammatical roles and relations being expressed by lexical means, word order and probably also by apophony and tones. The subsequent changes led to the development of compounding and incorporation.

The evolution of (early) PWC into (late) CWC included the following processes:

(34)   in phonology: the weakening of the role of tones and the appearance of a
                                            dynamic stress system
                                    the appearance of consonant clusters due to the syncope of
                                            vowels in unstressed syllables

          in morphology: the increased role of compounding in derivation
                                    the development of incorporation and agglutination
                                    the incorporation of previously independent pre-verbal personal
                                            and deictic pronouns, as well as local, temporal,
                                            directional and orientational adverbs into the verbal
                                            forms
                                    the increased role of prefixation.
                                    the development of polysynthetism

          in syntax: the weakening of the role of word order.

The main evolutionary shift from the NC dialect to the modern WC languages was thus, first, from agglutinative to the analytical or isolating language-type (due to the near complete loss of inflection), and then from the analytical to the synthetic type, in essence, from the analyticity of an isolating type to the extreme synthesis of a polysynthetic type.

Cross-linguistically, there are examples of similar diachronic changes in morphological type, cf., for instance, the evolution of English from inflectional to analytical structure, or of Chinese from agglutinative to the isolating type. But an even more striking parallel to the

evolution of WC is provided by French.[29] In the latter case we do know sufficiently well the stages which led the fully inflectional synthetic Latin, via Vulgar Latin, first to the analytical structure of early modern French and finally to the arguably polysynthetic structure of present-day colloquial (non-standard) French. Indeed, modern spoken French demonstrates how an analytical language can become polysynthetic by means of incorporation or fusion of originally discrete pronouns and grammatical words, which can be illustrated by the following example:

(35)   *que je ne t'aime pas* 'the fact that I don't love you'; pronounced as [kəʃtɛˈmpa].[30]

If French was an unwritten language and a field linguist would purport to describe it, one of the predictable outcomes would be its description in terms of a polysynthetic language rather than of a basically analytical language with some elementary nominal inflection, as we know it from standard textbooks. In case of the cited phrase, we would in fact have a typically WC-type polysynthetic verbal form, containing two agreement (subject and object) markers, as well as subordinating and negation markers:

(36)   *kə-ʃ-t-ɛm-pa*
                        SUB-1SG-2SG-love:PRES-NEG

(37) cf. Abx: *bzəja*   *bə-šə-zə-m-ba-wa*
                well   2SG:FEM-SUB-1SG-NEG-see-PRES:DYN:NFIN
                'The fact that I don't love you'.

From the material presented in this paper a natural conclusion should be drawn that, in principle, there is no direct correlation between the language type or structure and the genetic affiliation of the language(s) in question. It is true, that related languages tend to maintain similar morphological structures, due to the retention of features inherited from the common ancestor (cf. such conservative IE languages as Latin, Greek, Sanskrit, Slavic and Baltic languages, which preserve important features of the maternal IE system). Some other languages, on the contrary, show striking deviations or innovations from the older system, which in certain cases can even blur their genetic connection with the related languages.

In one or another way, West Caucasian too changed its original structural type, which resembled the modern EC language-type and developed into a system, which significantly deviates from that of the related EC languages, and which for some may blur the genetic relationship between these two NC branches. However, this relationship can be satisfactorily proven by the application of standard procedures of comparative-historical linguistics, which was so eloquently put forward in the first decades of the 20th century by Sergei Trubetzkoy and which was definitively demonstrated by the exceptionally talented modern historical linguists, Sergei Starostin (together with his colleague Sergei Nikolayev) and Auez Abdokov.

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[29]The analogy between the polysynthetic structure of WC and of modern colloquial French was suggested to me by Dr. Rieks Smeets (p.c.); see also a lively debate on this topic on the fora on the internet.
[30]The comment on the actual pronunciation of this phrase was provided to me by R. Lacroix.

Abbreviations:

Ab	Abaza
Abx	Abkhaz
Abzh	Abzhywa dialect of Abx
AN	Akademija Nauk (Academy of Sciences)
Bz	Bzyp dialect of Abx
CAbx	Common Abkhaz
Circ	Circassian
CV	Consonant-Vowel
CWC	Common West Caucasian
DYN	Dynamic
EC	East Caucasian
FEM	Feminine
IE	Indo-European
Kart	Kartvelian
NC	North Caucasian
NFIN	Non-Finite
NEG	Negative
PAbx	Proto-Abkhaz
PAvar-Andi	Proto-Avar-Andi
PCirc	Proto-Circassian
PDarg	Proto-Dargi
PEC	Proto-East Caucasian
PHunzib-Bezhta	Proto-Hunzib-Bezhta
PIE	Proto-Indo-European
PNax	Proto-Nakh
PNC	Proto-North Caucasian
PRES	Present
PTsez	Proto-Tsez
PWC	Proto-West Caucasian
PUb	Proto-Ubykh
SG	Singular
SUB	Subordinative
Tsab	Tsabal subdialect of Abzh
Ub	Ubykh
WC	West Caucasian
Xin	Xinalug

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