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Phonologic system of the Proto-Kartvelian radical-language (*paradigmatic analysis*)

General characterization of the consonantal system. The first stage in studying a phonological system of any language includes a paradigmatic analysis of a sound system. On the basis of paradigmatic analysis of consonants in reconstructed phonological system of Common Kartvelian language there is singles out four core classes of member phonems of a sound system:

1. **stop-plosives**; 2. **fricatives;** 3. **sonors**; 4**. sonants**. The listed consonant classes are conditionally marked as thus: **C** - stop-plosives and affricates, F- fricatives (spirants), **S** -sonors, **S°**- sonants.

Local zones of consonants of the Kartvelian languages are defined according to motion of a tongue and lower lip towards the inactive bodies of a speech organ. A tongue moves towards the different directions of a mouth, a lower lip – towards an upper lip and upper teeth. If the named consonants are grouped according to local zones, they will create ten groups of homorganic/heterogenic consonants:

1. **bilabial**
2. **dental**
3. **front alveolar**
4. **mid alveolar**
5. **back alveolar**
6. **palatal**
7. **mid lingual**
8. **back lingual**
9. **pharyngeal**
10. **laryngeal.**

The following consonant system is reconstructed for the Common Kartvelian language unity period:

Common Kartvelian consonant system

stop-plosives: b p p̣ d t ṭ g k ḳ

affricates: ʒ c ç ǯ č č̣ γ' q q̣

spirants: z s ž š γ x ω $h_ʌ$

sonors: r l m n

sonants: j w

If a consonant system of a Proto-Kartvelian language is compared with Common Kartvelian relevant data it will come out that from the Proto-Kartvelian to Common Kartvelian period an initial system has undergone considerable changes, i.e. transformation. A common trend of extinction and disappearance of certain phonemes is firstly observable:

1. On the Common Kartvelian chronological level there are no longer occurs mid alveolar - so called whistling-hushing sibilants ʒ, c, ç, z, s, which should have been characteristic of a phonological system of Proto-Kartvelian radical language. These phonemes transferred into relevant hushing sibilants, i.e. from Proto-Kartvelian to Common Kartvelian development process the whistling-hushing and hushing sibilants have merged with each other and the correlation according to this marker disappeared - **ǯ č č̣ ž š** / ʒ, c, ç, z, s, → / **ǯ č č̣ ž š.**
2. Shifting of intensive consonants which took place in a proto language is clearly observable, as well: bi-phonemic realization of relevant articulation of Proto-Kartvelian intensive consonants is observable in Common Kartvelian - *t: → st, *c: → cx, *č: → čx, ç: → çq, **č̣:** → č̣q. The same process took place in sibilant-spirants s: → sx, š: → šx. As it is clear, intensive voiced sibilant-affricates and voiced sibilant-spirants didn't function in Proto-Kartvelian as well as in the other groups of the Iberian-Caucasian languages group.
3. In Proto-Kartvelian there functioned a certain type of consonants which form the correlation according to velarization in hushing sibilants in the Apkhaz-Adygean languages. In Proto-Kartvelian the correlation functioned according to velarization in whistling as well as hushing sibilants. Velarized sibilants underwent a relevant transformation on a Common Kartvelian level: ʒ$_ə$ c$_ə$ ç$_ə$ z$_ə$ s$_ə$ ǯ$_ə$ č$_ə$ č̣$_ə$ ž$_ə$ š$_ə$, they turned into bi-phonemic groups, were realized in Common Kartvelian radical language and formed harmonic-decesive

complexes, as Giorgi Akhvlediani termed, i.e. Proto-Kartvelian ʒ꜀ c꜀ ç꜀ z꜀ s꜀ ǯ꜀ č꜀ ç̌꜀ ž꜀ š꜀ → Common Kartvelian ʒg ck ç̣ḳ zg sk ǯg čk ç̌ḳ žg šk.

4. Apparently, in Common Kartvelian the pharyngeal spirants *ɷ → ɣ/g, *h꜀ → x/k which have been preserved unchanged in the Nakh-Dagestanian languages till present, is broken up. A voiced pharyngeal affricate of the same zone Common Kartvelian *ɣ' voiced pharyngeal affricate Geo. q : Zan k : Svan ɣ are reconstructed on the basis of correspondent. From other standpoint an initial phonemic system appeared to be stable in a Common Kartvelian stem.
5. Considering the foregoing, a reconstructed variant of a consonant system of a Proto-Kartvelian radical language is presented as thus:

a. bilabial *****b *****p *****p̣ *****v
b. dental *****d *t *t: *ṭ
c. front alveolar *ʒ *c *c: ç *ç: *z *s *s: *****ʒ꜀ *c꜀ *ç꜀ *z꜀ *s꜀
d. mid alveolar *ʒ̩ *c̩ *ç̩ *z̩ *s̩
e. back alveolar *ǯ *č *č: *ç̌ *ç̌: *ž *š *š: *****ǯ꜀ *č꜀ *ç̌꜀ *ž꜀ *š꜀
f. back lingual *g *k *ḳ *ɣ *x
g. pharyngeal *****{ɣ'} *q *****q̣ *****ɷ *****h꜀
h. laryngeal *****h
i. sonors *m *n* r* *l
j. sonants *j *****w

which means that in the Proto-Kartvelian radical-language dramatically different from Common Kartvelian system functioned and the following correlations were relevant: 1. intensive / non-intensive; 2. whistling / whistling-hushing; 3. velarized sibilants / non-velarized sibilants.

Common Kartvelian sibilant consonant system. The issue of evolution and reflexation of front and back velar sibilants is a cardinal issue in the historical-comparative phonetics studying of the Kartvelian languages. It is an universally known fact that Georgian **whistling** sibilants correspond with Zan and Svan **hushing** allophones [N. Marr, Arn. Chikobava, V. Topuria, G. Rogava, G. Machavariani…] – Geo. ʒ c ç z s : Zan ǯ č ç̌ ž š : Svan ǯ→/ž č→/š **ç̌→/h ž š,** Georgian **hushing** sibilants- with

consonant-complexes **whistling sibilants+ back lingual stop-plosives** in Zan and Svan (resp. in western Kartvelian) – Geo. ǯ č ç̌ ž š : Zan ǯg → /ʒg čk→/ck ç̌ķ→/ç̣ķ (žg) šk→/sk : Svan ǯg→/sg čk→/šg ç̌ķ→/šķ (žg) šk→šg/sg. Both models of represented correspondences : 1. **whistling : hushing**; 2. **hushing : hushing + back lingual stop-plosive** is explained in the Kartvelian languages as articulation shifting, i.e. **velarization of hushing sibilants**. As it is said in the professional literature " *discussing according to tongue participation it is a basis, which defined Chan-Megrelian hushing instead of Georgian whistling . Differentiation between these consonants have been caused by an articulation changing – motion of a tongue back instead of a tongue tip".* Transformation of above mentioned sibilant consonants is supported by the correspondences in Zan, as well: *"*a *and* o *are characterized by rising of a tongue back than the Georgian vowels* e *and* a*. Articulation changing is of same type as it is in consonants*".

Along with sibilant correspondence of Geo**. whistling** : Zan-Svan **hushing** type an identic type Geo. **whistling** : Zan-Svan **whistling** is rightly singledout whichshould be discussed as historically developed phonemic correspondences. The latter - sibilantcorrelation **whistling : whistling** is discussed as the third evolution stage of initial sibilants in Zan and Svan: ʒ c ç̣ z s **(whistling)** →ǯ č ç̌ ž š **(hushing)** → ʒ c ç̣ z s **(whistling)**; cf. Geo. ç̣vet-i : Zan ç̌vat-i | ç̌vet-i 'drop', but ç̣vatan-s 'drips'.

Finally, I'd like to say, that Givi Machavariani's theory of three zones in sibilants in some cases, rightly explains the sibilant correlations among the Kartvelian languages, but chronologically the whistling-hushing sibilants formed a special group in Proto-Kartvelian, while on Common Kartvelian chronological level, they have been combined with hushing sibilants and due to their absence they could not derive any kind of variant in sound correspondences.