**Jan Henrik Holst:**
**Reconstructing the mutation system of Atlantic**
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**EXCERPT: Section 2.4., pp. 40 - 46**

## 2.4. Mutation systems of the world

Although mutation systems occur in many languages of the world, this is not widely known yet to linguists. Sholarship proceeded mostly in isolation on each particular language family or area. Researchers often did not know that what they investigated has many typological parallels. What was known most often was typological similarity with Celtic on the one side and something else on the other side, see e. g. Ternes (1990) for the pairing Celtic – Atlantic (and some other African cases). Recently an atlas on typological features in the languages of the world was published, Haspelmath / Dryer / Gil / Comrie (2005); it does not, however, contain the topic mutations (nor any other morphophonological phenomenon, cf. the contents on p. v - viii).

Because of this state of affairs, there has not yet been an attempt to compile a global listing of languages or language groups which have mutation systems. Also the following listing may not be entirely exhaustive as it is difficult to scan the earth for a typological feature: countless grammars would have to be evaluated in this respect, and even then an author might not have noticed the phenomenon or treated it in a way that it is difficult to gather its presence from his writings. The listing, however, certainly includes the most important families or areas affected and, what is more, disproves once and for all the myth that mutation systems are rare.

In Africa, the mutation systems in Atlantic are probably the most famous ones. But of course, they exist also in Mande; Brauner (2000: 23f.) explains the system in Loma, and on p. 24 he deals with Kpelle. For Kpelle see also Welmers (1950). Then, it is sometimes claimed that there are mutations in Nzema, a Kwa language closely related to Akan (Berry 1955, Chinebuah 1970), but these are only "half-mutations". Also only "half-mutations" are found in zone S of the Bantu languages, cf. the data in Gowlett (2003: 621f.). Creissels (1994: 141 - 172) does not distinguish "half-mutations" from mutations; this is why he counts the Bantu language Tswana (p. 146 - 149) and the Kwa language Anyi (in his French spelling Agni) (p. 169). Genuine mutations, in contrast, occur in some Plateau languages, see Gerhardt (1988: 72), Gerhardt's data quoted by Ternes (1990: 14f.) and Storch (1995: 141). There will be a new article on this topic by Ludwig Gerhardt (personal communication), and there will be another one on the Grassfields languages, which also have mutations, by Roland Kießling (personal communication). Both articles will appear in the Festschrift for Elmar Ternes. Finally, in Africa one must not forget Berber; these languages have verb forms with a short fricative and others with a long plosive instead, e. g. *ɣ-* / *qq-* (Mukarovsky 1963: 107). It is essential to stress that long consonants in fact do occur at the beginning of words in some languages; also Arabic dialects, Cypriot Greek and some languages of the west coast area of North America have this property. Another example is provided by Nunivak, a dialect of Central Alaskan Yupik (Holst 2005: 156). A note on terminology: some researchers use to say *geminate* instead of *long* when they speak of consonants. But for vowels *short* and *long* are usual terms, and there is no difference in vowels and consonants in what quantity is like phonetically. It is therefore preferable to use *long*.

In Europe, mutation systems in Celtic are so well known that they do not need another discussion here; a simple example is Breton *penn* "head" – *va fenn* "my head". There were also Celtic languages without mutations, but none of them is spoken any longer, and their attestation is fragmentary. All modern Celtic languages, however, have mutations. Also Romance must be counted. In Spanish *gustar* "like" (used in an impersonal construction) – *me gusta* "I like", there is an alternation of [ɡ] and the approximant that is more open than the fricative [ɣ]; on the nature of this sound see Holst (2005: 36). The same is valid for the labial and the dental place of articulation. In a structuralist phonemic analysis, these differences disappear due to a complementary distribution, but the point is that such an analysis does harm to what a language is like, cf. Holst (2005: 39f.). Celtic and Romance are also discussed by Ternes (1977). There are also German dialects, e. g. in Bavaria and Switzerland, with mutations (Elmar Ternes, personal communication). These are due to former prefixes, e. g. the *ge-* of the verbal system.

I will discuss Albanian at some length – not because this case was particularly impressive (it is not), but because I know of no source which does that. This language has an isolated pair *dele* ['dɛlɛ] "sheep (sg.)" – *dhen* [ðɛn] "sheep (pl.)". Moreover, it has pairs of words with consonant and nasal + consonant (often with a causative sense), e. g.:

| | | | | | | |
|---|---|---|---|---|---|---|
| *bi-j* | [bi-j] | "grow" | – | *mbi-j* | [mbi-j] | "sprout, germinate" |
| *besë* | [bɛs] | "faith" | – | *mbes* | [mbɛs] | "remain" |
| *dritë* | [dɾit] | "light (noun)" | – | *ndrit* | [ndɾit] | "shine" |
| *djeg* | [djɛɡ] | "burn" | – | *ndez* | [ndɛz] | "light (verb), kindle" |
| *zë* | [zə] | "seize" | – | *nxë* | [nd͡ʒə] | "learn" |
| *zi* | [zi] | "black" | – | *nxi-j* | [nd͡ʒi-j] | "blacken" |
| *gjallë* | [ɟał] | "alive" | – | *ngjall* | [ɲɟał] | "enliven, animate" |
| *gur* | [ɡuɾ] | "stone" | – | *nguros* | [ŋɡu'ɾɔs] | "turn to stone" |

It is uncertain whether one can speak of mutations here. This is related to the question if *mb*, *nd* etc. are prenasalized plosives / affricates. No-one has ever suggested this, but this is not surprising: one would probably need an Africanist background, or strong phonetic interests, to get to this idea. In my opinion, whether a prenasalized plosive / affricate or a sequence of nasal + plosive / affricate is present in a language is an empirical question: if only one mora is filled, there is a prenasalized sound. In Africa, a hint to prenasalized plosives / affricates is often that the phonotactics do not allow initial

consonant groups. In Albanian, however, there are many initial consonant groups (Buchholz / Fiedler 1987: 46 - 49), and this would not exclude that also groups beginning with a nasal exist. Historically, there is a prefix of the shape vowel + nasal involved in the examples. For the phonetic development cf. the vowel loss in the loanwords *mbret* "king" < Latin *imperātor* "master, emperor" and *ngushtë* "narrow" < Latin *angustus*, and also words that Albanian inherited from Proto-Indo-European confirm this sound law.

The southern neighbour of Albanian is Greek. The two languages are the closest living relatives of each other (Holst 1998). But also after the splitting-up of the common proto-language, these two languages often went through parallel developments. The problem under study is an instance. In derivation, Modern Greek has word pairs like these:

| | | | | | | |
|---|---|---|---|---|---|---|
| καρδιά | [karˈðja] | "heart" | – | γκαρδιακός | [garðjaˈkɔs] | "cordial" |
| τρόπος | [ˈtrɔpɔs] | "way, kind" | – | ντροπαλός | [drɔpaˈlɔs] | "shy" |
| τόπος | [ˈtɔpɔs] | "place" | – | ντόπιος | [ˈdɔpjɔs] | "native" |
| βαίνω | [ˈvɛnɔ] | "I walk" | – | μπαίνω | [ˈbɛnɔ] | "I walk in" |

These are definitely mutations; voiceless plosives alternate with voiced ones, and voiced fricatives alternate with voiced plosives. The mutations have as their origin prefixes of the shape vowel + nasal; this is exactly as in Albanian. But Modern Greek went one step further because the nasal is not present any longer in the examples. (Only in the orthography it is kept.) In connection to these data, Modern Greek also has a system of sandhi. For example, it affects NPs consisting of the article and a noun. For instance, "the father" in the nominative case is ο πατέρας [ɔ paˈtɛras], and in the accusative it is τον πατέρα [tɔm baˈtɛra].

As has been discussed already, it is sometimes difficult to delimit mutations. Finnish has the demonstrative pronouns *tämä* "this" – *nämä* "these", *tuo* "that" – *nuo* "those" (there is no initial *d-* in inherited words), *se* "that" – *ne* "those". The alternative analysis would speak of suppletion. There are also two strange pairs of verbs in Estonian and Finnish. These are Estonian *tõusta* / Finnish *nousta* "rise" and their causatives Estonian *tõsta* / Finnish *nostaa* "raise" (data from Holst 2001b: 75). The words are certainly related. But the initials do not match: it would only be regular to have the correspondence *t-* / *t-* or *n-* / *n-*. Instead, the initials show the *t-* / *n-* correspondence, this time not aligned with the number difference of singular and plural, but with the different languages.

In East Asia there is a vast area with languages with mutation systems. Tibetan has mutations of [kʰ] – [g], [t͡sʰ] – [d͡z], [ʈʰ] – [ɖ͡ʒ] and [tʰ] – [d] in verb pairs (Beyer 1992: 112, 137). Mutations also occur in other Sino-Tibetan languages; in Chinese, remnants exist in etymologically connected words. West of the Sino-Tibetan language family there is the language isolate Burushaski in the Karakorum mountains. It has a system of half-mutations, e. g. *gán-imi* "he took it", *a-yán-imi* "he took me", *nu-kán* "having taken it" (Berger 1998: 127). The two Burushaski nouns *baṭ* "skin" and *waṭ* "bark" even provide an example for a real mutation, because they are historically connected (Berger 1974: 185). In Nivkh, a language isolate in the Russian Far East, there is a large mutation system comprising 25 sounds and dominating the whole language. An example which shows it in operation is *ətək* "father" – *təf* "house" – *ətək rəf* "the father's house" (Comrie 1981: 267f.). Another language isolate of Eastern Siberia which provides an example is Yukaghir (Krejnovič 1958: 137): *kin bun´* "who killed?" – *met pun´* "I killed". In contrast to Nivkh, however, mutations are not very elaborate in Yukaghir.

It is debatable whether one should count Japanese *rendaku*, also called *sequential voicing*. These terms designate that, in countless instances, when composites are formed, the initial of the second part changes, e. g. *te* "hand" – *kami* "paper" – *tegami* "letter" (Shibatani 1990: 173 - 175). There is, however, no grammatical conditioning which would demand **gami* alone. Another not quite clear situation of a kind similar to Japanese is found in Korean. It may be better to keep such instances apart in order not to overload the term mutations. It is clear, however, that an areal connection of Japanese and Korean to the East Asian mutation area exists.

In North America, "half-mutations" occur in Shoshonean, cf. the discussion in 2.2. They also occur in Navaho where possessive prefixes can change the initial of the noun stem. In contrast, genuine mutation systems exist in Kiowa-Tanoan. This small language group has two branches: Kiowa, a single language, and the group of the Tanoan languages. Mutations in Kiowa are described by Watkins (1984: 60 - 63). She speaks of "verb-root-initial ablaut"; in verbs *b d z g* alternate with *p t c k* respectively, and *h* alternates with *pʰ*, *tʰ* or *kʰ* depending on the root in question. Mutations in Taos, a Tanoan language, are described by Trager (1946: 200). He uses the term "initial consonant ablaut"; among other things, ejectives alternate with non-ejectives. Recently a new classification of the languages of North

America has been worked out at the University of Hamburg which contains 14 language families, see Holst (2008). In connection with this research, Kiowa-Tanoan was discovered to be related to Kutenai (Holst 2008: 22). From Kutenai no mutations are reported.

In Mesoamerica, mutation systems occur in the Otomanguean language family, e. g. in Jicaltepec Mixtec (Suárez 1983: 58) and Otomí (Manfred Kudlek, personal communication). Mutations are also present in the geographically neighbouring small Mixe-Zoque language group, e. g. in Copainalá Zoque (Suárez 1983: 67). From South America I am not aware of any mutation systems. This statement is also valid for Australia.

It may be interesting that the three large areas Africa, East Asia and Mesoamerica, especially Otomanguean, are also the three most significant tone areas of the world. I limit myself to this remark, however, because searching for a reason for this connection would inevitably lead into speculating, and this topic is outside the scope of the present work. It must be emphasized that many of the Atlantic languages are not tone languages, and the common proto-language possibly was not a tone language either (cf. 1.1.). Thus incidentally exactly the language family under study in this book is not quite typical. But viewed from a broad perspective, the observation is definitely worth stating. By the way, some time ago also Nivkh was identified as a tone language by Pejros / Starostin (1986). The Kiowa-Tanoan languages are outside any of the three large tone areas, but these languages are tone languages as well – another detail. The tone area they are geographically closest to is of course Mesoamerica.

In any case, it can be seen from the foregoing survey that mutations often have to be a topic of areal linguistics. Apparently they can spread by language contact like other traits of language structure. In many cases it is not sure which languages are related to one another and which are not. Africa is no exception in this respect, despite claims to the contrary. But there are cases where language relationship cannot be the reason because one language group acquired the mutations clearly later. Gensler (1993), in an innovative investigation, puts forward evidence for the thesis that a number of typological traits shared by North Africa and Celtic are due to some historical connection. Mutations are involved in this subject. Indo-Europeanists sometimes object that the way how the mutations of Celtic arose is known, and therefore no looks to the outside are necessary, or they are even not allowed. But in order to take in such a view-point, one would have to

prove that there really is a contradiction between language-internal causes and external influences – there probably is not.

In some of the language families or groups named, there has already been success in determining how the mutation systems developed. For example, it is known that in Celtic, mutations came about by Sandhi. For introductory explanations of this point see Ternes (1990: 12f.); often a preceding word ended in a vowel or a nasal and therefore the initial consonant of the following word was affected in a specific way. Now, insights achieved in one language can be used for another one. In this way, further problems can be solved. Let us look at the Nivkh data *ətək* "father" – *təf* "house" – *ətək rəf* "the father's house" again. The reader is probably familiar with the typology by Nichols (1986) of dependent-marking and head-marking possessive constructions, see also Holst (2005: 69). Two possibilities open up for Nivkh. In one scenario, *ətək*, as an attribute to another NP, could be reconstructed to have contained a suffix *-*S*: **ətək-S*; the phonetic shape of this suffix caused the mutation of the following word, and the suffix was dropped later on. In the other scenario, *təf* contained a prefix **P*-: **P-təf*; the phonetic shape of this prefix caused the mutation, and the prefix was dropped later on. In order to decide among the two possibilities, the areal surroundings can be observed. Many languages in North Asia are dependent-marking, and they use suffixes. Therefore, the probability of the first solution to be correct is higher.

To sum up, it is neither surprising that mutation systems arise, nor are they rare on the earth. Given the wealth of synchronic and diachronic information on the mutation systems of the world, there are good chances for a further clarification of the picture in Atlantic, too.