

On the Loss of Vowel Harmony Systems in Some Chukotian Languages

Joseph H. Greenberg

Typology plays a central role in Professor Gamkrelidze's comparative research. He has given due weight to both synchronic and diachronic aspects. Synchronically we wish to reconstruct a system which conforms typologically to the norms of directly attested languages, while the changes from the proto-language to the later language should, in turn, conform to universal principles of diachrony derived from a generalized knowledge of processes of linguistic change.

In the present study I will be concerned with the process of diachronic change by which in a particular linguistic family, namely Chukotian, a group of languages of northeastern Siberia, a system of vowel harmony reconstructible for the proto-language (Golovastikov and Dolgopolskij 1972) and still functioning basically in its original form in Chukchi, and to a somewhat lesser degree in Kamchadal, can be found in various dialects of Koryak to form a series of stages by which in some dialects, especially Aliutor and Kerek, it has completely broken down. The study therefore exhibits the method I have called "intra-genetic comparison" and should be extended by a wider comparison employing the inter-genetic method (Greenberg 1969). In such a broader study, we compare other historically independent instances of the loss of vowel harmony systems in order, if possible, to arrive at broader generalizations about the diachronic universals of human language.

The Chukotian languages fall clearly into two branches. One of these contains Chukchi and Koryak, while the other consists of Kamchadal. Differences within Chukchi are minor and do not reach the level of dialect difference. The situation is very different in Koryak which has nine distinguishable dialects

which vary from ones with fully functioning vowel harmony systems (e.g. Palan) at one extreme, to Kerek on the other in which the vowel harmony system is completely absent. In this study the Kamchadal branch will not be included, while my consideration of Koryak dialects will be restricted to a few for which I have fuller information.¹

The essentials of the original Chukotian vowel harmony system may be briefly described with reference to Chukchi. As can be seen in Figure 1, the vowels are divided into two levels, high and low, which will be designated as I and II, respectively. Each level contains three vowels, front, central, and back and these will be called series 1, 2, and 3.

	1	2	3
I	i	e	u
II	e	a	o

Figure 1. Chukchi Vowel Harmony

The two levels I and II are often called weak and strong, respectively. The general rule is that if there is even one vowel which belongs basically to level I, it will lower the vowels of level II to the corresponding low vowels of the same series. Both strong and weak vowels can occur in either stems or inflections.

From the above rule it follows that a vowel which belongs to level II is unchangeable and always appears in the same form. A vowel which is basically a member of level I, however, will have two variants, the unchanged (high) if no member of level II is present and a changed (lowered) variant when in the same

words as a vowel of the strong or second level.

In addition, all the Chukotian languages have a neutral vowel, short and variable in quality which will be designated here by y, the transliteration of its usual orthographical designation in Cyrillic orthographies. Its nature will be discussed briefly later.

The basic functioning of the system can be illustrated by a few examples from Chukchi. The word kupren 'net' contains vowels of basic level I, u of series 3 and e of series 2. Here the form cited is in the absolute singular and -n is an absolute suffix. In the instrumental case, the stem will be suffixed by -te which also has a basic high vowel of series 2, giving kupre-te 'by means of the net.' If, however, it is in the associative case which is formed by a simultaneous prefix ge- ~ ga- and suffix -ma, the result will be ga-kopra-ma, in which -ma with its basic low vowel of series 2 has lowered both the prefix ge- and the two vowels of the stem to their corresponding members of level I. Thus, all words in Chukchi consist entirely of vowels of level I or of level II. Either type may be accompanied by -y, the reduced vowel.

However, in Chukchi at least, while all examples of y are phonetically similar, some behave like strong vowels and some like weak vowels. For example, the ablative case ending -gypy consists only of neutral vowels, but it is inherently strong in that it lowers the basic level I vowels of a stem to which it is suffixed, e.g. milger 'gun' but melgar-gypy 'from the gun.' Bogoras' dictionary (1937) carefully distinguishes for all instances of y whether it belongs to level I or level II. Skorik (1961: 36, footnote 36) says that "strong" y is probably a reduced form of strong a (of level II). According to Stebnitskij (1934(a):89) in his description of Kamchadal, a distinction of strong and weak y does not exist in Koryak or Kamchadal i.e. they are all weak and none have a lowering effect. In more recent Russian descriptions, y has

as a non-phonemic predictable vowel except perhaps for Chukchi. Thus, nymnym 'house' (absolute singular) in the Chavchoven (standard) dialect of Koryak is written nmnm. Doubtless some instances of y are mere transition vowels which help to avoid impermissible consonant clusters and y may shift its position in different inflected forms of the same word.

However, there are some indications that the Chukchi distinction exists in Koryak. Thus, Chavchoven nymnym 'house' has the plural nymnym-u, but wytwyt 'leaf' has the plural wytwyt-o (Korsakov 1939, Zhukova 1967); and this agrees completely with the indications in Bogoras' Chukchi dictionary. This is obviously an interesting question, but it is not pursued in further detail here.

We now turn our attention to Koryak. Stebnitskij (1937: 292) was apparently the first to enumerate the dialects of Koryak. In doing so, he also classified them according to certain phonetic differences, among which the fact that certain dialects use a in certain instances where the other dialects use e is prominent and has figured in all subsequent discussion of Koryak dialect classification. These dialects are called a-kajushchij and e-kajushchij, respectively; and a-kanje as against e-kanje is regarded as an indication of partial or full breakdown of the vowel harmony system. However, the whole process of the loss of the system is too complex to be simply represented in this way, as is, I believe, generally realized. Stebnitskij himself notes that some dialects have more widespread a-kanje than others.

His original division found in the above-cited passage labels e- dialects as Western and a- dialects as Eastern. It should be noted that he does not wish to assign Chavchoven, a dialect spoken by perhaps more than half of the Koryak in all parts of Koryak territory to either group. Also, he does not include in his table Kerek, a dialect spoken in the extreme northeast because of lack of information on it. It clearly belongs to the a- group and I have, therefore, in

reproducing his table included it. With this modification we have the following division of Koryak dialects based on Stebnitskij (Figure 2):

WESTERN (<u>e</u>)	EASTERN (<u>a</u>)
1. Palan	4. (Kerek)
2. Paren	5. Aliutor
3. Itkan	6. Karagin (with <u>e</u> influence)
	7. Apukin
	8. Kamenskoje
9. Chavchoven (not assigned)	

Figure 2

Koryak dialect division

The western-eastern division might on geographical grounds with equal justification be called southern-northern. The relative geographical position of the dialects is shown schematically in Figure 3.

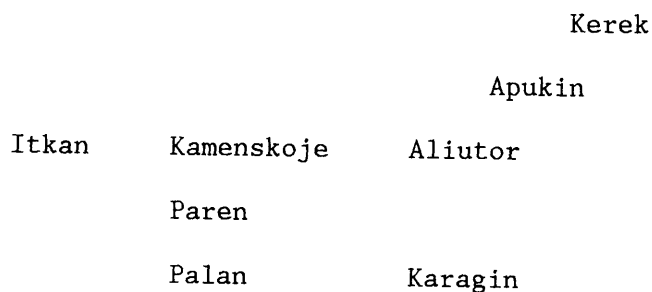


Figure 3. Koryak dialects

A classification of Koryak dialects into e and a types is also given in Zhukova 1968(a), p. 292. It agrees with Stebnitskij except that Chavchoven is considered an e dialect instead of remaining unassigned; and Karagin is

classified as an e dialect with large a influence rather than a with e influence. Aliutor and Kerek, which would surely be a dialects, are not considered probably because Zhukova considers them separate languages and not merely dialects of Koryak.

In the body of this study, I will consider the following five Koryak dialects for which there is reasonably adequate published data. They are Palan, Chavchoven, Kamenskoje, Aliutor, and Kerek. These are arranged in this order to illustrate the process of the loss of the vowel-harmony system so that the most conservative comes first and the least conservative last.

Before considering the details concerning each of these dialects, a modified form of Figure 1 with additional notation will be introduced in Figure 4, so that it will be possible to distinguish instances in which a particular vowel has several different functions within the system of vowel harmony.

I	i	e ¹	u
II	e ² , e ¹⁻²	a	o ² , o ¹⁻²

Figure 4. Chukotian vowel harmony

This notation can be illustrated by examples from Chukchi. To take the three varieties of e, for example, the e of penin 'former' is e¹ since it belongs to vowel set I, harmonizing with i in the same word which is also a vowel of level 1. In pelatyk 'to remain' the e of the first syllable is e² since it belongs inherently to the lower dominant level 2 and never changes. In n-om-gen 'hot,' the e is e¹⁻² because it contains the lowered variant of the adjective-form suffix gin which occurs with the stem -om seen in the absolutive

form of the noun omom 'heat.' The o of n-om-
gen is, of course, o². An example of o¹⁻² is found in morgynan 'by us'
(instrumental) in which o has been lowered from basic u as found in muri 'we'
(absolute), because of the basic a of the last syllable.

The Palan dialect of Koryak, described in detail in Zhukova (1980) has a system of vowel harmony essentially like that of Chukchi and is therefore representative of the initial stage of Koryak and, for that matter, Proto-Chuckotian. However, even Palan, as compared to Chukchi, shows a slight a-kanje tendency. Specifically, the prefix qaj- 'small, offspring of a particular animal' is fixed in form in contrast to Chukchi qej- ~ qaj. Thus, (Zhukova 1980: 38) qaj-til'myng 'young of an eagle' is in violation of vowel harmony, instead of the expected qej-til'myng. The few forms cited from the Paren dialect in Bogoras (1917) and in Stebnitskij (1937) suggest that this dialect is also conservative and represents the same stage as Palan.

The second dialect to be considered is Chavchoven, which forms the basis of the Koryak literary language. It is quite fully attested both in regard to grammar (Zhukova 1972) and in the dictionaries of Korsakov (1939) and Zhukova (1967). As was noted earlier, Stebnitskij, in his original division of Koryak dialects into those with e-kanje and a-kanje, does not assign Chavchoven to either.

The relevant characteristics of Chavchoven in regard to vowel harmony is that the system as such functions almost completely. However, there are indications of important modifications in the original system. The most obvious is that in a considerable number of stems, Chavchoven shows a where Chukchi has e¹. We may cite as examples Chavchoven alak 'in the summer' (Chukchi elek), akyk 'son' (Chukchi ekyk) and achan 'fat' (n.) (Chukchi echyn). However, there are also instances such as Chavchoven wejem 'river' (Chukchi wejem) in which the

shift to a does not occur. The change $e^1 > a$ does not normally occur in words which also have i or u so that violations of vowel harmony are few. For example, in Chavchoven ejuk 'to revive' (intr.), the initial e^2 does not change, nor does it in penin 'former' (Chukchi penin).

Further, e^2 never changes as we see from memy1 'seal' (Chukchi memy1) and mejemej 'tears' (n.) (Chukchi meremer). The alternation $i \sim e$ of series I operates with a few exceptions to be discussed. Thus we find the adjectival-forming suffix -kin \sim -ken 'pertaining to' in muqe-kin 'pertaining to the rain,' and ano-ken 'pertaining to spring.' These and other examples show us that e^{1-2} never becomes a. We have seen that e^1 does not become a either. Hence, we may say that the a-kanje of Chavchoven is limited to the change $e^2 > a$, and even here it does not occur in all examples. Since e^2 is precisely the e that alternates with a, this suggests that we have here an example of "lexical diffusion," essentially analogical changes by which within certain morphemes allomorphs in e^1 are replaced by those in a in series 2. None of these stems have i or u.

There is a further complexity in that in a few instances where there are morpheme boundaries, violation of vowel harmony occurs. Particularly a few basically high prefixes, which therefore should have low variants, have generalized completely one of the variants or use one of them in specific instances in violation of vowel harmony. One of these is the diminutive prefix qaj- which, as we have noted already for Palan, is fixed in form.

In addition to a few other instances of a for e^1 across morphemes e.g. in the adverb niki-ta 'at night,' compared with Chukchi niki-te, we have sporadic instances of the adjectival formant -kin where -ken with e^{1-2} would be expected. Both in Zhukova and Korsakov's dictionaries of Chavchoven, we find ala-kin 'pertaining to summer,' derived from ala-al 'summer' (singular absolutive)

instead of the expected *alaken. Since ala- is itself derived from ele- by a-kanje, it is possible in such cases that -kin survives from the earlier form *elekin. There is a tendency also for the diminutive suffix -pil ~ -pel to generalize to -pil in violation of vowel harmony e.g. wajam-pil 'rivulet.' Here again -pil could be a survival. However, as was noted earlier, the Chavchoven word for 'river' itself is wejem and not wajam by a-kanje, so this example is surprising.

A parallel tendency for the u alternant to replace o¹⁻² is found in the suffix -thul ~ -thol, 'piece, especially of the meat of an animal.' This usually harmonizes e.g. goja-thol 'reindeer meat,' but in both Korsakov and Zhukova we find kajngy-thul (Korsakov kajng-t?ul) 'bear meat' from kajngy-n 'bear.' Since this is an example of a-kanje (Chukchi kejngyn), we may once more have a historical survival across a morpheme boundary. It is significant, however, that in all these cases e¹ which varies with a has become a, but e¹⁻² which varies with i becomes i (never a) and that o¹⁻² tends to be replaced by the u variant of the same morpheme.

The next dialect, Kamenskoje, is, as we have seen, classified as an a-kanje dialect by Stebnitskij. It forms the basis of Bogoras' description of Koryak (Bogoras 1917, 1922). The first thing to be noted is that the change e¹ > a, namely a-kanje proper, is complete and occurs even in words which have i or u so that a, in effect, has become a neutral vowel. Thus we have not only wajam 'river' but nutanut 'land' (Chavchoven, Chukchi nutenut) and jingajkin 'flies, soars' as compared to Chukchi ringerkin.

However e still survives as part of the vowel system. Thus the word for 'tears'(n.)' is mejemej (Chavchoven mejemej, Chukchi meremer) with e². The alternations i ~ e with e¹⁻² and u ~ o with o¹⁻² still basically survive so there is still a vowel harmony system and phonetically besides the reduced vowel

y there are five vowels. For example the verb 'say' iw ~ ew, found in this form in Chukchi and Chavchoven has an e variant in ewang 'he, she says'. So also, with the stem of nutanut 'land', janja-notalo 'foreigners'. Across morpheme boundaries we do tend, as in Chavchoven and even Palan to find violations, always instances in which i is preferred to e¹⁻² and u is preferred to o¹⁻², e.g. Kamenskoje ngawan-pil 'small woman,' cf. Chavchoven ngawychngyn 'woman.' These rules for change in Kamenskoje from the basic forms as they occur in Chukchi are described carefully by Bogoras (1922: 671-2). To a large extent it appears that original a requires lowering from i to e, whereas a resulting from a-kanje does not, but the distinction is breaking down. The details remain to be studied and would be the subject of a special investigation. Such historically based distinctions are, of course, difficult to maintain, and it is clear that i and u are favored over e and o.

This whole process is further advanced in Aliutor. Here in addition to the full implementation of the a-kanje change e¹ > a, we find e¹⁻² > i and o¹⁻² > u. For example, the dual affix after consonant stems, which corresponds historically to the Chukchi plural affix ti ~ te is always -ti and the 'essive' case ('appear as, be called') is always -u after consonant stems and -nu after vowels corresponding to Chukchi u ~ o, and nu ~ no.

In addition, e² has become i as, for example, itgatyk 'to dawn,' compared to Palan etgatyk, and o² has become u as in susmavyk 'to prepare oneself,' compared to Palan chochmavyk. If these changes were the whole story, then Aliutor would not only have completely lost its system of vowel harmony, which is true, but the original system of five vowels a, e, i, o, u would be reduced to a three-vowel system a, i, u.

In Zhukova's sketch of Aliutor (1968), she says that there are only three vowel phonemes which she writes a, i(e), and u(o). The nature of the presumably

non-phonemic variants e and o are not discussed. I presume the basis for her positing e and o as non-phonemic variants is the highly probable complete absence of minimal contrasts between e and i, or o and u.

However, it does appear from the forms cited both here and in the appendix to her grammar of Palan, which contains word lists of the two Aliutor subdialects, that both e and o do occur, though infrequently. These instances are, however, confined to certain words.

The earlier account of Stebnitskij (1938) makes clear that these occurrences have a specific historical origin, namely, the contraction of certain diphthongs e < aj, o < aw, ew. In the Aliutor vocabularies in Zhukova (1980) there are indeed a few examples of e and o and these are consistent with the diphthongal origin proposed by Stebnitskij. Examples include mengatyk 'to grow,' corresponding to Palan mejngatyk; tekyk 'to do' (Palan tejkyk). Given Aliutor a-kanje, the expected forms would be majngatyk, etc. The Russian loanword chajnik 'teapot' has undergone the same change, giving Aliutor senik. Examples of o in Aliutor are wil-lotu 'sour fish heads,' corresponding to Palan wis-lewtu and ojen 'pasture' (Chavchuyen aw?jeny). The second parts of these compounds are common to Chukchi and Koryak and go back to lewt ~ lawt as, for example, in Chukchi (Bogoras 1937: 15).

Some sources (e.g. Golovastikov and Dolgopolskij) write o in general for Aliutor u; and Stebnitskij writes inconsistently both tato_l and tatu_l 'fox.' There is some indication that this vowel is intermediate in quality. Whether the relatively rare o resulting from contraction is the same is not possible to deduce from our sources.

The general picture, then, that we find is that Aliutor has reduced the five-vowel system to three with loss of vowel harmony, and that subsequently the gaps between a and i, a and u were filled by the contraction of diphthongs to e

and o. In addition to this source there are Russian loanwords such as krovat 'bed,' but in many (older?) loanwords Russian o is represented by u and e by i, e.g. sul'a 'salt' and qlippa 'bread' (xleb).

Outside of isolated citations in other sources, my knowledge of Kerek is derived from Skorik (1968b). Here, beside the reduced vowel y, there are only three vowels a, i, and u and a complete absence of vowel harmony. All of the changes found in Aliutor can be easily illustrated for Kerek also. These are e¹ > a in akkanga 'son'; e² > i in kyttil 'forehead' (cf. Chavchoven kyccel with e², cited in Korsakov 1939: 120); e¹⁻² > i in mimlynga 'water' cf. Chavchoven mimyl ~ memyl; o² > u in jajul 'fox' and o¹⁻² > u in the suffix -thul ~ -thol 'piece, meat of a particular animal' as seen in qujathul 'reindeer meat' in which the first u is from o² and the second derives from o¹⁻².

The question of e and o deriving from diphthongs as in Aliutor apparently does not arise as we see from Kerek kajngyn 'bear'; Aliutor kengyn; Chavchoven kajngyn.

There are two aspects of the development by which in Koryak dialects a five-vowel system has been reduced to three and the vowel harmony system is lost. One is that, as if by a conspiracy, the final result as seen most clearly in Kerek is the most common three-vowel system of the languages of the world, namely, a, i, u. The second is that in the process e, which plays a double role in the system, when in series 1 becomes i but in series 2 becomes a. This suggests, as we see particularly in Chavchoven where lexical diffusion is at work, that the "sound changes" are really examples of morphological analogy on a large scale. Moreover, they seem to follow a particular order, namely e¹ > a, e² > i and o² > u.

The only problem is that we are assuming that the three kinds of e (e², e¹, e²⁻¹) are phonetically identical and likewise the two kinds of o, namely o² and

o¹⁻². If they are not phonetically the same, then they may obviously undergo different changes, although, even in this case the "conspiracy" origin of the three-vowel system still remains.

In none of the descriptions of Koryak I have seen is there any indication of phonetic differences among the morphologically different forms of the same vowel. It should be noted that it appears from all the phonetic descriptions that e with its dual status in the system is phonetically a front vowel and not a central vowel.

The situation may be different in regard to Chukchi. Bogoras (1934: 12) says that the two forms of e which he symbolizes differently are "approximately the same" and in his dictionary he simply says they are both pronounced like Russian e.

In Skorik (1961: 23) there is an interesting description of two allophones of both e and o, which depend on their roles in the vowel harmony system. In the notation used in this paper, for e there is a higher and more front variant like the initial vowel of Russian etot which represents e¹ and e¹⁻² and a more open variant like the vowel of Russian exo which represents e². Similarly for o there is a fronted and raised variant representing o¹⁻² and low back variant for o² which, of course, never varies morphophonemically.

However, even if Proto-Koryak had such variants, they do not behave similarly in the changes of the Koryak vowel system. Skorik's front variant of e represents both e¹ which becomes a in Koryak dialects and e¹⁻² which becomes i, while the lower variant e² also becomes i. In regard to o, both variants ultimately become u. With regard to the whole Chukotian group, one would, of course, desire much more phonetic, especially instrumental data, which may exist but were not available to me.

The present attempt at a comprehensive account of the process of loss of

vowel harmony in Koryak dialects must, of course, in view of the factors enumerated here, be considered tentative. It is the hope of the author that it will stimulate further study of this interesting phenomenon both in Chukotian languages and in other parts of the world.

NOTES

1. I have seen references to manuscript materials on Chukotian languages which were not available to me. All conclusions in this article are subject to further verification in the light of such data.

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