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## **A Preliminary Survey of Some Uralic Elements in Costanoan, Esselen, Chimariko and Salinan**

*Abstract:* The paper aims to show that several Amerindian languages, namely Salinan, Esselen, Chimariko and Costanoan, previously spoken in California, contain lexical material with distinctly Uralic features. The paper also discusses the existing proposal of a close relationship between Miwok and Costanoan, known as the Utian family, and the controversial Hokan hypothesis. Alleged cognates between Miwok and Costanoan are considered here to be areal loanwords and Hokan is not considered to be a valid unit in its current perimeter. The paper proposes to group Salinan, Esselen, Chimariko and Costanoan in a new Amerindian family called ‘Cal-Uralic’ and to group ‘Cal-Uralic’, Uralic, Yukaghir, and Mongolian in a new macro-family called ‘West-Siberian’.

*Keywords:* Uralic, Amerindian, Costanoan, Miwok, Salinan, Esselen, Chimariko.

### **1. Introduction**

Lyle Campbell, who certainly is among the present-day linguists most critical of any comparative endeavors linking Amerindian languages together or linking them with Eurasian languages, listed a number of such proposals in one of his books under the heading “Far-fetched Proposals.” (Campbell, 2000:261–62.) One of the proposals mocked in Chapter 8 is a connection between Huave, an Amerindian language still spoken Mexico, and Uralic by Bouda in 1964. So it is with this mostly skeptical, if not negative, background in mind that the present paper will propose that Uralic material is retrievable in several Amerindian languages, now extinct but formerly spoken in California: the Costanoan family, also known as Olhone or Ohlone, Esselen, Chimariko and Salinan.

Needless to say, the present paper does not have any ambition à la Greenberg to lump all Amerindian languages together and encompass all documented material on

them. The goal is rather modest and only takes into account a precise and selective set of languages. But at the same time, it aims to break new ground with sound footing, showing that some Amerindian languages contain lexical material shared with Eurasian languages: in the present case, with Uralic to be precise, also with Yukaghir, which has been suspected of being quite close to Uralic for several decades, and with Mongolian, which may be a less frequently proposed partner as far as bilateral comparisons with Uralic are concerned. A more ambitious goal of the paper is to silence the critical stance against long-distance comparative work, as it can be proved that regular and acceptable results can be achieved in that field. Another goal of more methodological nature is to show that words with regular sound correspondences are not necessarily true cognates, but can be loanwords.

The paper begins with short presentations of each group or language under survey, discusses methodological issues about long-distance comparative endeavors, tackles existing proposals to link Costanoan with Miwok or the Hokan hypothesis, and then describes and discusses a number of potential cognates between Uralic and Costanoan, Esselen, Chimariko and Salinan. Additional data from Yukaghir and Mongolian have been added in order to address the issue of the relationships of Uralic to other languages spoken in Northern Eurasia.

## **2. The claims: ‘Cal-Uralic’ as a subbranch of ‘West-Siberian’**

The central claim of the paper is that the following languages or families: Uralic, Costanoan, Esselen, Chimariko, Salinan, Yukaghir and Mongolian are genetically related and add up to a consistent genetic node, which I propose to call ‘West-Siberian’. The next claim is that Costanoan, Esselen, Chimariko and Salinan are more closely related to Uralic than these five are to Yukaghir and Mongolian on the other

hand. Costanoan, Esselen, Chimariko and Salinan belong to a branch of ‘West-Siberian’ that I propose to call ‘Cal-Uralic’.

On the whole, very few words are shared only by ‘Cal-Uralic’ and Yukaghir or Mongolian and are lacking in Uralic at the same time, whereas a large number of words are shared only by ‘Cal-Uralic’ and Uralic and do not have Yukaghir or Mongolian comparanda. As it stands, this situation suggests that ‘Cal-Uralic’ is very close to Uralic and to some extent one may go as far as to consider it to be a subbranch of Uralic, and possibly even of Finno-Ugric. Now I have to admit that my greater familiarity with Finno-Ugric than with Samoyedic and Mongolian may introduce an artifact and that specialists of these latter groups may improve the general picture and that the genetic assignment of ‘Cal-Uralic’ within Uralic as a whole might become more balanced in the future. As a rule it can be observed that ‘Cal-Uralic’ is less agglutinative and exclusively suffixal than Uralic or Finno-Ugric is. This is likely to be a conservative feature. For example Esselen *enne ama* ‘I eat’ can be compared with Mokša *ama-n* ‘I eat’ and Hungarian *én* ‘1SG’. The status of Mokša *-(ə)n* as an originally free form is nevertheless still noticeable as it can be suffixed to the negation instead of the verb: *af-əl-ən ama* ‘I was not eating’. It can be noted that Esselen *enne* goes against the preconceived dogma that Mokša *-n* and Hungarian *én* are based on a dissimilated labial nasal *m*.

At this preliminary stage, the data supporting these claims are mostly lexical. Grammatical and morphological issues will be addressed in coming papers. The fact is that the basic vocabulary of Uralic is represented in ‘Cal-Uralic’ to such a massive and precise extent that neither the validity of ‘Cal-Uralic’ nor the relationship between Uralic and ‘Cal-Uralic’ can seriously be doubted.

A few words with a possible Indo-European pedigree can be found in ‘Cal-Uralic’: Mutsun *mirte* ‘man’ compares well with Mordvin *\*mirde* ‘husband, man’, a word with hardly any Uralic counterpart that is usually considered to be from Indo-Iranian *\*mṛta* ‘mortal being’: man as opposed to gods. Another one is Salinan *tats-* ‘star, moon’, which compares well with Finno-Volgaic *\*täšte* ‘star’. Though this has not been proposed before, it can be noted that this root, which is not pan-Uralic but is present only in the westernmost subbranches, does not have any comparanda in Siberian languages and bears a quite uncanny similarity with PIE *\*H<sub>2</sub>ster* ‘star’. Another instance is Esselen *tomani* ‘night’, quite close to PIE *\*tem-* ‘dark’, from which Latin *tenebrae* is derived. These words suggest that ‘Cal-Uralic’ cannot have come to its Californian location at a very ancient dating. At most ‘Cal-Uralic’ may be 4,000 years old. And its recent intrusion in North America would explain both its location along the coast, its apparent lexical closeness with westernmost subbranches of Uralic: Volgaic, Permic and Balto-Finnic, and its more distant relationship with Yukaghir and Mongolian. Quite paradoxically, ‘Cal-Uralic’ best resembles the languages located at the greatest distance across Northern Eurasia.

### 3. Presentation of Costanoan

This group of languages derives its name from Spanish *costa* ‘coast’ and *costano* ‘coast-dweller’. As their name indicates, these Amerindian languages used to be spoken in a rather limited swath of coastal land from San Francisco Bay at the North extending toward the south to Monterey Bay. It is unclear whether Costanoan should be divided into dialects or languages, and then how many of them. Milliken *et al* (2009:1) considered six languages. This issue is anyway mostly irrelevant for the present discussion as what matters is the lexical data that have been collected from informants. The problem is rather that Costanoan has more often than not been poorly

and approximatively recorded, and that more or less extensive and reliable data exist only for a subset of languages. A historiographical overview of this family can be found in Golla (2011:162-168). Attested varieties from north to south are:

- Karkin, usually considered a significantly divergent variety of Costanoan
- Tamyen (exemplified by Santa Clara), Chochenyo, Ramaytush, allegedly very close dialects
- Awaswas (exemplified by Santa Cruz, Costanoan I, II)
- Chalon (exemplified by Soledad)
- Mutsun, one of the languages with the most extensive description
- Rumsen (exemplified by Rumsen, Costanoan I, IV, NN)

Apart from the controversial Hokan hypothesis, it has been defended and documented that Costanoan was to be integrated with Miwok into a larger group, called Utian, and then further up into an even bigger phylum: Penutian. This proposal is mentioned by Golla (2011:168): “Utian is the term coined by Catherine Callaghan, and adopted by most other researchers, to label a classificatory unit within Penutian consisting of the Miwok and Costanoan families. The validity of this classification is supported by numerous cognates [sic] showing regular correspondences.”<sup>1</sup> The closeness of the relationship between Costanoan and Miwok is intuitively described by Callaghan as similar to that between Romance and Germanic (A personal communication of Callaghan mentioned in Milliken *et al*).

Quite obviously it is not possible to propose a novel relationship for Costanoan with Uralic without an adequate discussion of the existing Utian hypothesis at the same time. For the sake of clarity and neutrality in the discussion, words that have been proposed by Callaghan to be cognates between Miwok and Costanoan will be

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<sup>1</sup> See papers by Callaghan, 1997 and 2001.

called Utianisms and words that I propose below to be cognates between Costanoan and Uralic will be called Uralisms. So the issue is basically to determine whether Utianisms are acceptable, whether Uralisms are acceptable and whether both can be simultaneously acceptable, and what the status and relevance of Utianisms and Uralisms are.

I have deliberately refrained from hammering the word ‘cognate’ in each and every sentence. I assume the reader will implicitly understand that from my point of view the real and deep cognates are Uralisms and that on the contrary Utianisms are either loanwords or unacceptable comparanda. This being said, it must be emphasized that I do not deny that a good number of Utianisms exhibit perfectly regular patterns and that they provide conclusive etymologies for some Costanoan lexemes. From my point of view, they are nevertheless loanwords resulting from areal contacts. Loanwords from French and Latin into the English language provide a nice parallel to the status of Utianisms in Costanoan.

The crucial and definitive point is that a given word is either a Utianism or a Uralism, never both at the same time. What connects Costanoan with Uralic is precisely lacking in Miwok. In theory, one may imagine that a number of lexemes could be simultaneously Utianisms and Uralisms. This would then suggest that the three groups are potentially genetically related and could form a valid node. But the present situation is that Utianisms do not seem to have any retrievable comparanda in Uralic. At this point, Costanoan cannot be proved to be simultaneously related to Miwok and Uralic. In other words, and to jump to the conclusion, Costanoan is genetically related to Uralic and also contains a number of loanwords from Miwok, which quite logically are less ancient than the cognates with Uralic, as shown below by some sound changes undergone by Uralisms and Utianisms.

A typical feature of Costanoan is a kind of Satem law, which changed *\*q* into *k* and *\*k* into *ś*. This isogloss separates Costanoan from the other ‘Cal-Uralic’ languages. The contrast between *\*q* and *\*k* is not reconstructed for Proto-Uralic, but still exists in Yukaghir and Mongolian, at least with back vowels.

#### **4. Esselen**

Esselen, or Huelel, used to be spoken on the Central Coast of California, south of Monterey and of Costanoan. It may have been the first language of California to become extinct. Very little information on this language has survived. We know about 110 words of Esselen and have but a few lines written in the language. Considering how scanty our knowledge is, genetic assignment can only remain somewhat speculative. There are nevertheless quite clear indications that Esselen is related to its immediate neighbors: Costanoan and Salinan, and to Uralic.

#### **5. Salinan**

Salinan was another indigenous language spoken along the central coast of California. It has been extinct since the death of the last speaker in 1958. The principal published documentation on Salinan is Mason (1918). A more recent grammatical study, based on Mason's data and on the field notes of John Peabody Harrington and William H. Jacobsen, is Turner (1987), which also contains a complete bibliography of the primary sources and discussion of their orthography. Two dialects are recognized, *Antoniaño* and *Miguelño*, associated with the missions of San Antonio and San Miguel.

Among the languages surveyed in the paper, Salinan is at the same time the best described and the one with the clearest morphological similarities with Uralic, as will appear in other papers.

## 6. Chimariko

Chimariko is an extinct language isolate formerly spoken in northern Trinity County, California, by the inhabitants of several independent communities. Roland Dixon worked on the Chimariko language in the early 1900s, when there were few remaining speakers. Later, extensive documentation on the language was carried out by J.P. Harrington, who worked with Sally Noble, the last speaker of the language. Chimariko is the northernmost language involved in the paper and is not contiguous to the others. Dixon (1910:306) states that “the language of the Chimariko shows in general greater similarities both formal and lexical, to the Shasta than to either the Hupa or the Wintun. These similarities, which are discussed in the linguistic portion of the paper, in fact are so numerous as to make it seem most likely that the two languages are genetically related.”

Dixon (1910:337–38) lists a number of words that appear to be shared by Chimariko and Shasta. None of them are Uralic, so they are probably loanwords from Shasta, resulting from the close contact described by Dixon. Shasta itself appears to be as little Uralic as is possible.

Chimariko is conspicuous for preserving the contrast between *\*q* and *\*k*, though *\*q* is sometimes spirantized as *x*, and the contrast between two affricates *\*ts* and *\*tʃ*. Chimariko also appears to be more conservative of vowel length than the other languages were.

## 7. The controversial Hokan-Coahuiltecan hypothesis

The present proposal to group Costanoan, Esselen, Chimariko and Salinan in the same family is not new. The last three have been proposed to be part of the so-called Hokan-Coahuiltecan hypothesis with a number of other languages, with Costanoan being optionally Penutian. So it would seem that my approach is, so to speak,

reinventing Hokan from the outside using Uralic as a touchstone and a sieve, instead of building it on an Amerindian basis alone, but this is not the case.

Judging from the words listed in Greenberg (1987:131–42) and presented as Hokan “cognates”, or in other works like those by Margaret Langdon on Pomo or Yuman and Hokan in general, the general assessment is that the perimeter of Hokan-Coahuiltecan includes a hodge-podge of languages with no valid genetic connections. If representative of something that still has to be properly defined, nearly all these comparanda appear un-Uralic, and if Hokan-Coahuiltecan makes sense with, for example Pomo and Yuman as its core members as per Langdon, then Costanoan, Esselen, Chimariko and Salinan are to be removed from that group.

For example the stem *\*tāw-* ‘lung’ is typical of Uralic and is sometimes suffixed with *-l*: Finnish *tävy*, Estonian *tävi* ‘lung’ but Mokša *tevlal* ‘lung’. A similar pattern is found in ‘Cal-Uralic’: Costanoan Santa Cruz *tawe* ‘lung’ but Salinan *tohol* ‘lung’. Yukaghir *\*lonlə* ‘lung’ is a potential cognate if a change or an assimilation *\*tonlə* > *\*lonlə* is accepted. I cannot but believe that Costanoan and Salinan words are cognates of such a semantically precise and isolated Uralic word as *\*tāw-* ‘lung’, plus a suffixal formative *l*, which appears in plenty of other ‘West-Siberian’ words. If these are not cognates, then what is? They are built using the same stem and the same optional formative. If the names and locations of the languages are removed, no Uralicist would doubt these words are from some Finno-Volgaic-looking language. Furthermore it can be noted that Hungarian *tüdö*, Samoyedic Tavdi *t’ienda* with suffix *\*-nt-*, Samoyedic Nenets *t’iwäk* with suffix *k* and Selqup *tyymäktä* with suffix *mäktä* have other formatives than the one shared by Western Uralic and ‘Cal-Uralic’. If these words were not inherited, then who transmitted the Balto-Finnic form to Costanoan and the Mokšan form to Salinan? This set of words is clearly representative of the

kind of semantic, phonetic and morphological “chance coincidences” that only appear in cognates.

In sharp contrast is a sample of words for ‘lung’ in ‘Cal-Uralic’ neighbors: Central Miwok *poškaly-*, Yokuts *comot*, Wintun *kos(ol)*, Central Pomo *cōt*, Shasta *yaxaxa*?. Here are the words for ‘lung’ in three so-called Hokan languages, to which ‘Cal-Uralic’ is supposed to be related: Seri *askt*, Tequistlateco *alwofis*, Yaqui *hemaha<sup>2</sup>acim*. This sample underlines the unusual congruence of Costanoan Santa Cruz *tawe* and Salinan *tohol* with Finnish *tävy*, Estonian *tävi* and Mokša *tevlal*: all meaning ‘lung’. This unusual congruence is recurrent in plenty of other morphemes and words: body-parts, kinship words, natural phenomena, fauna, floral, verbs, suffixal formatives, case-markers, tense-markers, etc. At the same time, this sample underlines the complete dysfunction of the Hokan and Penutian lumps. Pomo *cōt* and Yokuts *comot* may be related and derived from *\*comot*, with syllabic contraction in Pomo (*\*comot* > nasalized *\*cōōt* > denasalized, but still long *cōt*), but they are not supposed to be related according to current “classifications” as per Greenberg or Ruhlen... Pomo *cōt* is supposedly Hokan while Yokuts *comot* is supposedly Penutian. Similarly, Costanoan Santa Cruz *tawe* is Penutian, but Salinan *tohol* is Hokan. Are we entitled to speak about a huge mess concerning these genetic assignments?

### 8. Some methodological prolegomena

Before more comparanda are introduced, it is necessary to restate what a sound correspondence is and how cognates should be distinguished from look-alikes or loanwords.

At first glance it would seem that the Uralic word for ‘heart’: *\*šüde(mε)* (UEW477), as exemplified by Mordvin *\*šedi* or Finnish *syyd-* [sy:d], is very similar to a number of Costanoan lexemes for ‘heart’, ‘liver’ or ‘intestine’: Mutsun *sire*

‘heart, mind’ (Mason 1916:431), Costanoan III *sire* ‘heart’ (Heizer 1952:10), Costanoan II, III *sire* ‘liver’ (Heizer 1952:10), Costanoan IV *sirre* ‘intestines’ (Heizer 1952:10), Soledad *side* ‘liver’, Rumsen *sire* ‘heart’, *siri* ‘liver’, Santa Cruz *sire* ‘liver’ (Heizer 1955:162). Note that Mordvin *\*šedi* definitely looks like Soledad *side*. One might conclude that these words are potential cognates.

In my opinion, the relationship of these words is far from acceptable as it can be shown from other words that, as a rule, Uralic *\*šüde* should be reflected in Mutsun as unattested *\*\*suṭe*, not as *sire*. For example: Uralic *\*od(a)-* ‘to sleep’ (UEW334-35) ~ Mutsun *eṭe-n* ‘to sleep’ (Mason 1916:442), Uralic *\*adj-<sup>2</sup>* ‘to make a bed (on the ground)’ (UEW2) ~ Mutsun *eṭs* ‘bed’ (Mason 1916:433), Uralic *\*wudje* ‘new’ (UEW587) ~ Mutsun *iṭas, iṭas* ‘new’ (Mason 1916:461). As a rule, the Uralic proto-phoneme *\*d* is reflected in Mutsun by the typically Californian phone written *ṭ*. For that matter, the relationship between Mordvin *\*šedi* and Soledad *side*, however convincing it may look, is to be rejected. From a phonetic point of view, Costanoan words compare better with Saami *\*čirme* ‘kidney’ and *\*čidme* ‘intestines’ (UEW472-73), which unfortunately have very few representatives in other Uralic languages. It would therefore appear that Costanoan words are based on several proto-forms, which in all cases are not the same as PU *\*šüde*, but were closer to *\*šire* and *\*šide*, as attested in Saami.

It can be further noted that this set of Costanoan words is listed by Callaghan as Utianisms and compared with Miwok *\*kylla, \*kulla* ‘liver’. This proposal is dubious. To begin with, it cannot explain the form: Soledad *side*. Now it could be argued that this form is unrelated or has been improperly recorded, but this kind of objection looks too much like ad-hoc tailoring of data. The next point is that there is no

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<sup>2</sup> <j> indicates either a yod or palatalization.

indication that a geminate *ll* would ever become *r*, or maybe *rr*, in Costanoan. The Uralism: Costanoan *\*qullul-is* ‘elbow’ ~ Vogul *konlowl* ‘elbow’ shows that *\*ll* < *\*nl* is stable. Or else Mutsun *mumullalluk* ‘butterfly’ ~ Uralic Mokša *melaw*, (dial.) *(mo)melu* ‘butterfly’. The alleged change *l(l)* > *r* is not supported. In other words(,) the Utianism Miwok *\*kylla*, *\*kulla* ‘liver’ ~ Costanoan *\*sire*, *\*side* ‘liver’ is most probably an illusion and cannot be accepted.

That being said(,) it is true that acceptable Utianisms like Miwok *\*huk* ‘nose’ ~ Costanoan *\*hus* ‘nose’, indicate that Costanoan must have undergone a change *\*k* > *\*s* at some point in the past. Another item: Miwok *\*kyt*, *\*kut* ‘tooth’ ~ Costanoan *\*sit* ‘tooth’ is much less clear as Costanoan can be compared with Mongolian *\*sidü* ‘tooth’ and is not an obvious loanword. To be more precise Utianisms involving the guttural stop *\*k* have two different reflexes in Costanoan: *\*k<sub>1</sub>* > *k* and *\*k<sub>2</sub>* > *s*. The conditioning factor identified by Callaghan for *\*k<sub>2</sub>* > *s* is a neighboring high vowel *\*i/y/u*.<sup>3</sup> There is therefore no need to distinguish two proto-phonemes as a complementary distribution can be evidenced. Incidentally, it can be noted that Costanoan forms like *kullulis* ‘gloss’ still exist and have not undergone this change: *\*ku* > *su*, though they apparently contain a high vowel.<sup>4</sup> So we are faced here with a kind of contradiction. As will be described below, Uralisms require two guttural phonemes that can be noted *\*q* and *\*k*, implicitly suggesting that they stand for uvular and velar stops. Comparanda listed below indicate that these two proto-phonemes *\*q* and *\*k* fused in Uralic languages: traditional PU reconstructions uniformly have *\*k*. Mongolian also supports a distinction between two stops: *\*q* and *\*k*. The reflexes of these stops in Costanoan Uralisms are *\*q* > *k* and *\*k* > *ś*, a palatal sibilant written <x>

<sup>3</sup> The vowel *y* only exists in Miwok and apparently adapted to *i* in Costanoan.

<sup>4</sup> In theory it could also be argued that the vowel in *kullulis* was not *\*u*, but *\*o*, when the change *\*ku* > *su* occurred. But then the other Utianism *koro*, *kolo* ‘foot’ speaks against such an idea.

in sources.<sup>5</sup> Two waves of palatalization occurred with different results: inherited *\*k* became *ś*, in all contexts, but borrowed *\*k* from Miwok was palatalized into *s*, only when close to a high vowel *\*i/y/u*.

The overall situation can be explained if we hypothesize the following sequence of changes:

- Uralism *\*q* is maintained as *\*q*
- Uralism *\*k* is palatalized into *\*ś*, whatever the neighboring vowel was
- Utianism *\*k* (from Miwok) is introduced but remains a different phoneme from

Uralism *\*q*

- Utianism *\*k* (from Miwok) is later palatalized into *\*s*, in contact with high vowels

- Utianism *\*k* (when not in contact with high vowels) and Uralism *\*q* merge into *\*k*

Another example is the word for ‘eye’: Mutsun *śin* ‘eye’ (Mason 1916:432), Costanoan II, IV *śin* ‘eyes’ (Heizer 1952:9), Rumsen, Santa Cruz *hin* ‘eye’ (Heizer 1955:174). It is tempting to compare Costanoan words with Uralic *\*śilmε* ‘eye’ (UEW479) and especially with Permian *\*śin* ‘eye’, where the cluster *lm* fused to become *n*. But this is not an acceptable Uralism because as a rule PU sibilants *\*s* and *\*ś* are reflected in Costanoan uniformly by *\*s* whereas this word has *\*ś*. Callaghan has proposed to compare Costanoan *\*śin* ‘eye’ with Miwok *\*śynty* ‘eye’.

This is an interesting proposal though the extra syllable of Miwok *\*śynty* ‘eye’ is an issue. Callaghan mentions the word *śintešte* ‘big-faced’ but nothing proves that *\*śin* ‘eye’ is a shortened form of *\*śinte*. In fact, such a form as *\*śinte* would probably

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<sup>5</sup> As far as is possible, original graphies have been retained but the pair <c, x> is standardized as <ś, ś>.

become *\*sítte* according to the replacement of clusters by geminates, which seems to be a highly frequent feature of Costanoan. Unless Miwok *\*šynty* ‘eye’ can be adequately parsed and explained within Miwok, this is not an acceptable Utiatism. It appears that the word Costanoan *\*simpur*, *\*sinpur* ‘eyebrow, eyelash’ is a compound involving *\*sim*, quite probably a Uralism in relationship with *\*šilme* ‘eye’. Logically *\*simme* would be expected in Costanoan to mean ‘eye’, but this word is not attested.

As a rule, sound correspondences are rather straightforward for consonants because, more often than not, they are identical rather than corresponding. A major exception is *\*k > \*ś* in Costanoan. Another is the weak consonants: *h, ɣ, w, j* which often mute out in both groups. It can be noted that Costanoan shows a pervading tendency to replace clusters **with** geminates. Another tendency is the elimination of palatalization in Costanoan, and more generally in Esselen, Chimariko and Salinan. Correspondences for vowels in Uralisms are trickier because a really satisfactory reconstruction of Proto-Uralic vowels has not been achieved yet, in spite of several attempts in that direction. The PU vowels as exemplified by the UEW or other reconstructions should not be given more importance than they deserve. In addition, vowel harmony in ‘Cal-Uralic’ tend to level the vocalism of the words.

It can also be noted that false cognates also exist in the corpus: for example Salinan *ts<sup>2</sup>ep* ‘good, well’ looks like a potential comparandum for Mokša *tseber* ‘beautiful, good’ or Hungarian *szép* ‘beautiful’. This is a loanword of Turkic origin. Mokša *tseber* is most probably from Tatar *čibar* and in all cases inherited words in Mokša cannot begin with affricates like *ts* or *č*. I am not aware of a received etymology for Hungarian *szép*. It is likely from a similar Turkic source. Apparently Miwok cannot be the source of that word in Salinan, nor does Miwok look Turkic.

This suggests Salinan might have been in contact with some kind of Turkic language in the past, either in Eurasia or in the Americas.

### 9. Preliminary list of reconstructed forms

Many words shared by Uralic languages and any of Costanoan, Esselen, Chimariko or Salinan usually have comparanda in Yukaghir or Mongolian as well. But it can be noted that a number of words do not have such counterparts in Yukaghir or Mongolian. What is more, many words with no counterparts in Yukaghir or Mongolian have comparanda only in the westernmost branches of Uralic: Finno-Volgaic or Finno-Permian or Volgaic.

|                |  |
|----------------|--|
| anger          | * <i>kāš</i> in <i>Costanoan, Volgaic</i>  |
| arm            | * <i>kūni</i> in <i>Costanoan, Uralic</i>  |
| arrow          | * <i>pūk-să-</i> in <i>Chimariko, Uralic (+Yukaghir)</i>                                   |
| bed            | * <i>(h)ădj-s-</i> in <i>Costanoan, Salinan, Chimariko, Uralic (+Yukaghir)</i>             |
| belly          | * <i>pīqă</i> in <i>Costanoan, Salinan, Chimariko, Uralic</i>                              |
| belly, loin    | * <i>humt-</i> in <i>Costanoan, Uralic (+Mongolian)</i>                                    |
| berry          | (?) * <i>pītsī</i> in <i>Costanoan, Salinan, Uralic</i>                                    |
| to bite        | * <i>qăč-</i> in <i>Costanoan, Uralic</i>  |
| bitter, rotten | * <i>qăq-</i> in <i>Costanoan, Uralic (+Yukaghir, Mongolian)</i>                           |
| boil           | * <i>kūHpa</i> in <i>Costanoan, Uralic</i>   |
| bow            | * <i>năhū-</i> <i>Costanoan, Esselen, Uralic (+Yukaghir, Mongolian)</i>                    |
| bride          | * <i>bōr-</i> in <i>Costanoan, Uralic (+Mongolian)</i>                                     |
| to bring, give | * <i>tōye-</i> in <i>Esselen, Uralic (+Yukaghir, Mongolian)</i>                            |
| to chew        | (?) * <i>sīwădž-</i> in <i>Costanoan, Uralic (+Mongolian)</i>                              |
|                | * <i>kār-</i> in <i>Costanoan, Uralic (+Yukaghir)</i>                                      |
| cloud          | * <i>păwī-</i> in <i>Costanoan, Salinan, Chimariko, Uralic (+Mongolian)</i>                |
| to come, enter | * <i>săy-</i> in <i>Costanoan, Finno-Permian (+Yukaghir)</i>                               |
| crane          | * <i>qaraq</i> ‘crane’ in <i>Uralic (+Mongolian)</i>                                       |
| day, sun       | * <i>ăši</i> in <i>Costanoan, Salinan, Esselen, Chimariko, Volgaic</i>                     |
| to die         | * <i>qŷy-vl-</i> in <i>Costanoan, Uralic (+Yukaghir)</i>                                   |
| to do          | * <i>tiH-</i> in <i>Salinan, Uralic</i>  |
| to drink       | * <i>lōHw-</i> , and * <i>lōH-pa</i> ‘wet’ in <i>Chimariko, Uralic (+Yukaghir)</i>         |
|                | * <i>juH-q-</i> in <i>Costanoan, Uralic (+Mongolian)</i>                                   |
|                | * <i>ŷšim-</i> , * <i>ŷcīm</i> in <i>Esselen, Chimariko, Uralic (+Yukaghir, Mongolian)</i> |
| earth          | * <i>ămă-</i> , *( <i>a</i> ) <i>may-</i> in <i>Chimariko, Uralic (+Mongolian)</i>         |
|                | *( <i>a</i> ) <i>muda</i> in <i>Esselen, Finno-Volgaic</i>                                 |
| eye            | * <i>šilm(a)</i> in <i>Costanoan, Uralic</i>   |

|                              |  |
|------------------------------|--|
| to eat                       | * <i>(h)ämmä-</i> in <i>Costanoan, Salinan, Chimariko, Uralic</i> (+Yukaghir, Mongolian)<br>* <i>järHd-sä-</i> in <i>Costanoan, Volgaic</i><br>(?) * <i>l̥y-äm-</i> in <i>Salinan, Uralic</i> (+Yukaghir, Mongolian) |
| father                       | * <i>hāje</i> in <i>Esselen, Uralic</i> (+Yukaghir)<br>* <i>äppä</i> in <i>Costanoan, Uralic</i><br>* <i>itsē</i> in <i>Chimariko, Uralic</i> (+Yukaghir, Mongolian)   |
| feather                      | * <i>tiw-</i> in <i>Costanoan</i> (+Yukaghir)  |
| to fill, thick<br>Mongolian) | * <i>äpā'äl-</i> , * <i>äpāl-</i> in <i>Salinan, Chimariko, Uralic</i> (+Yukaghir, Mongolian)  |
| full                         | * <i>tāw-</i> in <i>Costanoan, Uralic</i> (+Yukaghir)  |
| to give                      | * <i>āmī-</i> , *( <i>a</i> ) <i>m̥y-</i> in <i>Costanoan, Salinan, Uralic</i> (+Yukaghir)   |
| to go, walk                  | * <i>qāw-</i> in <i>Costanoan, Salinan, Uralic</i> (+Yukaghir, Mongolian)  |
| to go (fast)                 | * <i>m̥n-</i> in <i>Salinan, Chimariko, Esselen, Uralic</i> (+Yukaghir, Mongolian)   |
| to go (away)                 | * <i>k̥Hī-</i> in <i>Costanoan, Salinan, Uralic</i> (+Yukaghir)  |
| goose                        | * <i>qalaq-</i> in <i>Costanoan, Salinan</i> (+Mongolian)  |
| to grow (old)                | (?) * <i>jār-</i> in <i>Costanoan, Chimariko, Uralic</i>   |
| hand, palm                   | * <i>kā-t-</i> in <i>Costanoan, Uralic</i>   |
| heart, organ                 | * <i>z̥ire</i> in <i>Costanoan, Uralic</i> (+Mongolian)  |
| hill                         | * <i>dōm(p)-</i> in <i>Costanoan, Salinan, Ugric</i> (+Mongolian)  |
| (sweat)house                 | * <i>mätte-</i> in <i>Salinan, Uralic</i> (+Mongolian)   |
| husband                      | * <i>māqū-</i> in <i>Costanoan</i> (+Yukaghir)   |
| kidney, testicle             | * <i>bōy-</i> in <i>Salinan</i> (+Mongolian)   |
| to kill                      | * <i>ōgū-</i> in <i>Chimariko</i> (+Yukaghir, Mongolian)   |
| large                        | * <i>īč-</i> in <i>Costanoan, Salinan, Uralic</i> (+Mongolian)   |
| lip                          | * <i>tūprā</i> in <i>Costanoan, Uralic</i>   |
| long, distant                | * <i>(ku)-<sup>2</sup>a(u)-ka</i> in <i>Salinan, Uralic</i> (+Mongolian)   |
| long ago                     | * <i>kū</i> in <i>Costanoan, Uralic</i>  |
| louse, flea                  | * <i>dāje-</i> in <i>Salinan, Uralic</i>   |
| lung                         | * <i>tāwe</i> < (?) * <i>tayu-</i> in <i>Costanoan, Salinan, Uralic</i>  |
| man                          | * <i>mirdje</i> in <i>Costanoan, Volga</i> (possibly from Indo-Iranian)<br>* <i>koje</i> in <i>Salinan, Uralic</i>   |
| marten                       | * <i>qād-pa</i> in <i>Chimariko, Uralic</i>  |
| mist, dew                    | * <i>pīča</i> in <i>Costanoan, Uralic</i>  |
| mother                       | * <i>ānjā</i> in <i>Costanoan, Salinan, Uralic</i>   |
| mother-in-law                | * <i>nis</i> in <i>Costanoan, Uralic</i>   |
| mouth                        | * <i>hāŋi</i> in <i>Costanoan, Chimariko, Uralic</i> (+Yukaghir)   |
| mud, clay<br>Mongolian)      | * <i>liwa</i> in <i>Costanoan, Salinan, Chimariko, Uralic</i> (+Yukaghir, Mongolian)   |
| new, young                   | * <i>wīd-</i> in <i>Costanoan, Uralic</i> (+Mongolian)   |
| now                          | * <i>tjā-n-</i> , <i>Chimariko, Uralic</i> (+Yukaghir)   |
| old, elderly                 | * <i>īm-</i> in <i>Costanoan, Chimariko, Uralic</i> (+Mongolian)   |
| to peel                      | * <i>kāmo</i> in <i>Costanoan, Uralic</i>  |
| quail, pheasant              | * <i>qīm-</i> in <i>Salinan</i> (+Mongolian)   |
| raven                        | * <i>qāHr</i> in <i>Costanoan, Uralic</i> (+Yukaghir, Mongolian)   |
| to remember                  | * <i>māl-</i> in <i>Salinan, Uralic</i><br>* <i>inū-</i> in <i>Costanoan</i> (+Yukaghir)   |
| to say                       | * <i>āz-</i> (profane) in <i>Costanoan, Salinan, Uralic</i> (+Mongolian)<br>* <i>āl-</i> (religious) in <i>Costanoan, Salinan, Esselen, Uralic</i> (+Yukaghir)   |

|                  |   |
|------------------|---|
| seed             | *wīt- in Costanoan, Volgaic   |
| shaft, arrow     | *džǎʔ- in Salinan, Chimariko, Uralic (+Yukaghir, Mongolian)   |
| shoe             | *kowt in Costanoan, Uralic  |
| sister-in-law    | (?) *kīHa- in Salinan, Uralic (+Yukaghir)   |
| skin             | *kalj in Costanoan, Finno-Ugric<br>(?) *pō(n)ča- ‘(animal) skin’ in Salinan, Uralic   |
| to skin, skin    | *āsūgǎ in Costanoan, Salinan, Uralic (+Mongolian)   |
| sky              | *ilīma- in Esselen, Salinan, Uralic   |
| to sleep,        | *ūd- in Costanoan, Uralic (+Mongolian)<br>*ūm- in Salinan, Uralic (+Yukaghir, Mongolian)  |
| to speak         | *kāhī in Costanoan, Salinan, Uralic (+Mongolian)<br>*mōn- Costanoan, Uralic (+Yukaghir)   |
| star             | *dāšt- or *dātš in Salinan, Finno-Volgaic (possibly Indo-European)  |
| to shoot (arrow) | *pǎq- in Salinan, Esselen, Uralic (+Yukaghir),  |
| sun              | *nap in Salinan, Hungarian (+Mongolian)<br>*āši in Costanoan, Salinan, Esselen, Chimariko, Volgaic  |
| to swim          | *xūj- in Costanoan, Chimariko, Uralic (+Yukaghir, Mongolian)  |
| thirst, drunken  | *īw-īr-, *īw-m- in Costanoan, Uralic (+Yukaghir, Mongolian)   |
| three            | *gūlm-, *gūlapa in Costanoan, Salinan, Esselen, Uralic<br>(+Mongolian)  |
| throat           | *korq- in Costanoan, Uralic   |
| tongue           | (?) *ībān in Chimariko, Uralic (+Yukaghir)<br>*kāhīl- in Uralic (+Mongolian)  |
| tooth            | *sītū- in Costanoan (+Mongolian)<br>*sālǰūq- ‘tooth, incisive’ in Salinan, Uralic (+Yukaghir)<br>*āγur- ‘molar’ in Costanoan, Esselen, Uralic (+Yukaghir,<br>Mongolian) |
| two              | *qǎq- in Salinan, Chimariko, Esselen, Uralic<br>*ikī- in Uralic (+Yukaghir, Mongolian)  |
| water, saliva    | *sīyū- in Costanoan, Chimariko, Uralic (+Yukaghir, Mongolian)   |
| who              | *ki- in Esselen, Uralic (+Yukaghir, Mongolian)  |
| wind             | (?) *wālma in Costanoan, Volgaic  |
| yellow           | (?) *čū, *čaw in Costanoan, Salinan, Volgaic  |

## 10. Comparanda and data

Comparanda with a short vowel ǎ :

\**(h)adj-s-* ‘bed’

- Mutsun *ets* ‘bed’ (Mason 1916:433), Rumsen *ets*, Santa Clara *ettanin* ‘bed’ (Heizer 1955:162), cf. \**eden* ‘to sleep’ with *e* which may play a role in the vowel being *e* instead of expected *a*,<sup>6</sup>
- Salinan *išemet* ‘bed’, *tsata* ‘blanket’,
- Chimariko *hatšiinar-utsa*<sup>7</sup> ‘bed’, *tšitsá* ‘blanket’,
- Uralic \**adj-* ‘to make a bed (on the ground)’ (UEW2), Mokša *atsam* ‘bed’, *atsama-* ‘to lay out, spread’,

<sup>6</sup> Callaghan proposed to compare these words with Miwok \**ʔe:čy-* ‘to sleep’. This is in my opinion a false Utianism.

<sup>7</sup> *-utsa* is an instrumental suffix in Chimariko.

*Comment:* It is not unusual that initial vowels are lost in that group. Further comparanda: Yukaghir \**amdi-* ‘to spread under, lay under, prepare’, \**amdije* ‘bedding’ (Nikolajeva 2006:102), with a metathesis in Yukaghir.

\**ǎyur-* ‘molar, tooth’

- (?) Mutsun *raras* ‘molar tooth’ (Mason 1916:431), Cf. *tutper* ‘lip’ < \**turpa* with a similar reduplicated initial,
- Esselen *awur* ‘teeth’ (Shaul appendix A),
- Uralic Mokša *jur-bej* ‘molar’, a compound with *pej* ‘tooth’,

*Comment:* Further comparanda: (?) Yukaghir \*(*w*)*ajin* ‘molar tooth’ (Nikolajeva 2006:98), Mongolian \**araya* ‘molar tooth’ (? with metathesis).

\**ǎl-* ‘to pronounce (often in religious or magical context)’

- (?) Mutsun *lole* ‘to cause to speak’ (Mason 1916:450),
- Esselen *alpa* ‘to speak’ (Shaul appendix A),
- Salinan *alsāl* ‘to pray’, (?) *ǎleʔl-* ‘to ask, inquire’,
- Uralic \**al-* ‘speech-act stem: to promise, curse, bless’ (UEW7), Mokša *aldǎrd-* ‘to chat’,

*Comment:* Further comparanda: (?) Yukaghir \**aal-* ‘to order’ (Nikolajeva 2006:100).

\**ǎmǎ-*, \*(*a*)*may-*, \*(*a*)*muda* ‘earth’

- (?) Mutsun *mun* ‘earth, dirt’ (Mason 1916:435),
- Esselen *maṭa* ‘earth’ (Shaul appendix A),
- Chimariko *ama* ‘earth’,
- Uralic \**may-* ‘earth, land’ (UEW263–64), Finno-Volgaic \**muda* ‘earth’ (IEW705),

*Comment:* Further comparanda: (?) Mongolian \**mara* ‘salty earth’.

\**ǎmǐ-*, \*(*a*)*mǐγ-* ‘to give’

- Mutsun *ami-* ‘to give, bring, carry’ (Mason 1916:441),
- (?) Salinan *mak-* ‘to give’ (Mason 1918:143),
- Uralic \**mǐγ-* ‘to give, sell’ (UEW275),

*Comment:* Further comparanda: Yukaghir \**memde-* ‘to give’ (Nikolajeva 2006:263).

\*(*h*)*ǎmmǎ-* ‘to eat’ (quite possibly a babytalk word)

- Mutsun *ama-* ‘to eat’ (Mason 1916:441), Costanoan II *hammai*<sup>8</sup>, Costanoan III *ammai* ‘to eat’ (Heizer 1952:25), Costanoan II (*yemak*) *ammani* ‘(time to) eat’, *i.e.* ‘noon’ (Heizer 1952:14), \**ama(n)* ‘food’ (Heizer 1952:163),
- Salinan *ama* ‘to eat, such gruel’,
- Chimariko *ama*, *ma* ‘to eat’, *hāmeu* ‘food’<sup>9</sup>, *ame-mtu* ‘to be hungry’<sup>10</sup>,
- Uralic Mokša *ama-* ‘to eat’, *and-* ‘to feed’ < PU \**amt-* (UEW8),<sup>11</sup>

*Comment:* Can be criticized as phonosymbolic but the root is far from being Pan-Amerindian. Further comparanda: Mongolian \**ama-* ‘to taste’, Yukaghir

<sup>8</sup> This form has an initial *h* but not the other form (*yemak*) *ammani*. It is unclear whether *h* should be taken into account in the reconstruction.

<sup>9</sup> From the Uralic point of view this looks like a past participle: Mokša *ama-f* ‘eaten’ < PU \**ama-w*.

<sup>10</sup> From the Uralic point of view this looks like an infinitive: Mokša *ama-mda* < \**ama-mto*.

<sup>11</sup> UEW8 does not list Mokša *ama-* and mixes up items for ‘to feed’ and ‘to give’.

\**māmā*- ‘to eat (of a child)’ (Nikolajeva 2006:256), \**amlə* ‘to swallow’ (Nikolajeva 2006:103).

\**ānjā* ‘mother’

- Mutsun *ana* ‘mother’ (Mason 1916:437),
- Salinan *anewu* ‘grandmother’,
- Uralic \**anja* ‘mother’ (UEW10),

*Comment:* In Uralic this root is used for a large array of words for ‘elder female relatives’. Further comparanda: (?) Yukaghir \**enje* ‘mother’ (Nikolajeva 2006:161).

\**āpā’āl-*, \**āpāl-* ‘to fill, thick’

- (?) Chimariko *pepe’in* ‘thick’,
- Salinan *apel-*, *epel-* ‘to fill’,
- Uralic \**pal-* ‘many, thick’ (IEW350–51),

*Comment:* Further comparanda: Yukaghir \**polon-* ‘full’ (Nikolajeva 2006:237–38), (?) Mongolian \**olon-* ‘many’.

\**āppā* ‘father’

- Mutsun *apa* ‘father’ (Mason 1916:437), Rumsen *appan* ‘padre’ (NN 1802:172),
- Uralic \**appa* ‘father-in-law’ (UEW14),

*Comment:* Probably a kind of babytalk word. Cf. \**ītsě*, \**hāje* ‘father’.

\**āši* ‘day, sun’

- Mutsun *ismen* ‘sun’ (Mason 1916:435), with \**menj-* ‘sky’ (UEW276),
- (?) Salinan *ts’ewuni’*, *ts’anone’* ‘light of day’ (Mason 1918:133),
- Esselen *aši* ‘sun’ (Shaul appendix A),
- Chimariko *asi*, *asse* ‘(to)day’,
- Uralic Mordvin \**ši* ‘sun’, \**tē-či* ‘today’ [lit. ‘this day’],

*Comment:* Mutsun may be a compound involving with \**menj-* ‘sky’ (UEW276), and Salinan may involve \**num-* ‘above’ (UEW308).

\**āšūgā* ‘skin’

- Mutsun *swiše* ‘to skin, take off hide’ (Mason 1916:452),
- (?) Salinan *axwem* ‘skin, hide’,
- Uralic ≈*šuka* ‘skin’ (UEW488), Ugric \**šoy-* ‘skin, hide’,

*Comment:* Further comparanda: Mongolian \**šayal-* ‘to peel, skin’.

\**āz-* ‘to say’

- \**asier-* > *esier-*: Mutsun *esier-* ‘to say’ (Mason 1916:442),
- (?) Salinan *sā* ‘to speak’, *se* ‘to tell’, (?) *āse* ‘name, call’,
- Uralic Mokša *az-* ‘to narrate, say’, Ugric \**saw* ‘word, speech’ (UEW885–86),

*Comment:* Further comparanda: Mongolian \**ayi-* (if < \**azi*) ‘to speak aloud, recite’.

\**džā’-* ‘shaft, arrow’

- Chimariko *sa’a-* ‘arrow’,
- Salinan *tse’-uto* ‘arrow-point’, a compound: Cf. Mutsun *utis* ‘arrow-point’<sup>12</sup>,

<sup>12</sup> This stem seems to be from Miwok: Cf. Central Miwok *hotto* ‘arrow-head’.

- Uralic \**čäjere* ‘shaft’ (UEW612), Moksha *sejer* ‘shaft’, (?) Udmurt *čers* ‘spindle’,

*Comment:* Further comparanda: Yukaghir \**čaw* ‘arrow’ (Nikolajeva 2006:127), \**čowinə* ‘spear, arrow’ (Nikolajeva 2006:142), (?) Mongolian \**žebe* ‘end of arrow’ (< (?) \**džaʔi-*). In Uralic this root never means ‘arrow’. Cf. Mongolian \**sayali* ‘cross-bow’, though normally \**s* cannot reflect palatal \**ś* or \**ž*.

\**hǎŋi* ‘mouth’

- Mutsun *sai* ‘mouth’ (Mason 1916:442), Soledad *hai*, Rumsen *haik* ‘mouth’ (Heizer 1955:160), Costanoan IV *sai* ‘mouth’ (Heizer 1952:9),

- Chimariko *hawa* ‘mouth’,

- Uralic \**aje* ‘mouth’ (UEW11–12), Hungarian *ajak* ‘lip’,

*Comment:* Further comparanda: Yukaghir \**aŋa* ‘mouth’ (Nikolajeva 2006:106), (?) Mongolian \**aŋgai-* ‘to open’.

(?) \**jár-* ‘to grow (old)’

- Mutsun *yer* ‘to grow old’ (Mason 1916:447),

- Chimariko *itri-* ‘to grow’, *itridusku* ‘old maid’,

- Uralic \**er* ‘old, big, much’ (UEW75), Hungarian *öreg* ‘old’,

*Comment:* Further comparanda: (?) Mongolian *urgu-* ‘to grow’.

\**järHdsǎ-* ‘to eat’

- \**järHdsǎ-* > \**erdsa* > \**erdse-*: Mutsun *ertse-*, *ertste-* ‘to eat supper’ (Mason 1916:442),

- Uralic Mokša *jarxtsa-* ‘to eat (generic)’, isolated word,<sup>13</sup>

*Comment:* No comparanda in Mongolian or Yukaghir.

\**kǎhǐ* ‘to speak, sound’

- Mutsun *sahie* ‘voice’ (Mason 1916:432),

- (?) Salinan *kʔokʔolše* ‘to converse, speak’, if *kʔ* is the merger of \**kH*,

- (?) Chimariko *kō*, *koko* ‘to talk, call’,

- Uralic \**kaj-k* ‘sound’ (UEW643), also \**keHle* ‘tongue, language’ (UEW144–45),

*Comment:* Further comparanda: Mongolian \**kele* ‘to say, tongue, language’ < (?) *kahil*.

\**kǎlj* ‘skin’

- Mutsun *selien* ‘skin’ (Mason 1916:432),

- Uralic Finno-Ugric \**kaljwe* ‘(thin) skin’ (UEW121),

*Comment:* meager data. The phoneme *lj* is usually considered a Finno-Ugric innovation. Cannot be compared with Mongolian \**qalisu(n)* ‘skin, shell’ because of the initial \**q*.

\**kǎmo* ‘to peel’

- Mutsun *somo* ‘to skin, take off hide’ (Mason 1916:454),

- Uralic \**kama* ‘to peel, crust’ (UEW121–22),

*Comment:* Further comparanda: Yukaghir \**qompi-* ‘fur-coat’ (Nikolajeva 2006:385), \**qār*, \**qajr-* ‘skin’ (Nikolajeva 2006:379–80), and Mongolian

<sup>13</sup> The digraph <rx> writes a voiceless rhotic peculiar to Mokša and possibly originating in a cluster \**rH*.

\**qayul-* ‘to peel’ seem to reflect another root \**qay-*: Uralic \**kärnä* ‘bark, crust’ (IEW138–39).

\**kār-* ‘to bite, chew’

- Mutsun *śorko* ‘to gulp, swallow’ (Mason 1916:454),

- Uralic \**kar-* ‘to bite’ (UEW129),

*Comment*: Yukaghir \**kerilə-* ‘to bite, chew’ (Nikolajeva 2006:208).

\**lām-* or better \**līyām-* ‘to eat (soup)’

- Salinan *lam-* ‘to eat’,

- Uralic (approximative)  $\approx$  *lem-* ‘soup’ (IEW245) < (?) \**liyam-*,

*Comment*: Further comparanda: Yukaghir \**ley-* ‘to eat’ (Nikolajeva 2006:237–38), (?) Mongolian \**labsi-* ‘to eat greedily’, if < \**liyamsi*.

\**ljāṅ-* ‘goose’

- Chimariko *lālo* ‘goose’,

- (?) Uralic \**lunta* ‘goose’ (IEW254),

*Comment*: Further comparanda: Yukaghir \**ljaṅče* ‘goose’ (Nikolajeva 2006:233–34).

\*(*ǔ*)*mǎ-* ‘to burn’

- Chimariko *maa* ‘to burn’,

- (?) Uralic: Permic \**umər-* ‘flame’ (IEW804),

*Comment*: Further comparanda: Yukaghir \**memčə* ‘(to) flame’ (Nikolajeva 2006:263).

\**māqū-* ‘husband’

- Mutsun *maku*, *makas* ‘husband’, *mukene* ‘man’ (Mason 1916:437),

- Not in Uralic,

*Comment*: Further comparanda: Yukaghir \**moyodo-* ‘to marry’ (Nikolajeva 2006:271). Cf. Japanese *muko* < \**mukwo* ‘son-in-law’.

\**nāhū-* ‘bow’

- (?) Mutsun *lawan* ‘bow’ (Mason 1916:433),

- Esselen *paku-nax* ‘bow’, apparently two words: *arrow* and *bow*,

- Uralic  $\approx$  *njeHl* ‘arrow’ (UEW37), < \**nāhūl*,

*Comment*: Further comparanda: Yukaghir \**non-* ‘bow, arrow’ (Nikolajeva 2006:308), Mongolian \**nemu* ‘bow’ < \**nahmu*.

\**nǎp* ‘sun’

- Salinan *na?* ‘sun’ (Mason 1918:133), < \**nap-*

- Uralic Hungarian *nap* ‘sun, day’,

*Comment*: Further comparanda: Mongolian *naran* ‘sun’ < (?) \**napran*.

\**pāq-* ‘to shoot (arrows)’

- Salinan *paxuwe* ‘bow’ (Mason 1918:133),

- Esselen *paku-nax* ‘bow’, apparently two words: *arrow* and *bow*,

- Uralic  $\approx$  *pekšä* ‘arrow’ (UEW369), but Vogul *paxt-* ‘to shoot (arrows)’,

*Comment*: Further comparanda: Yukaghir \**puki-*, \**paqi-* ‘arbalest (arrow)’ (Nikolajeva 2006:367).

*\*pǎwĩ-* ‘cloud’

- Salinan *pai* ‘cloud’ (Mason 1918:133),
  - Chimariko (*h*)*awēdam* ‘cloud’,
  - Uralic *~pilwe* ‘cloud’ (UEW116), Mordvin *\*pejel* ‘cloud’,
- Comment:* Further comparanda: Mongolian *\*eul(en)* ‘cloud’.

*\*qǎč-* ‘to bite’

- Mutsun *kase* ‘to bite’ (Mason 1916:459),
  - Uralic Finno-Permic *\*kačka* ‘to bite’ (UEW641),
- Comment:* No comparanda in Mongolian or Yukaghir. Cf. *\*qaq-č-* ‘bitter’.

*\*qǎd-pa* ‘marten’

- Chimariko *qāpam* ‘marten’,
  - Uralic *\*kadwa* ‘marten, hermin’ (UEW116), Lapp *\*gadpe* ‘marten, hermin’,
- Comment:* No comparanda in Mongolian or Yukaghir.

*\*qalaq-* ‘goose’, *\*qaraq* ‘crane’,

- Mutsun *lalak*, *lukluk* ‘geese’ (Mason 1916:428),
  - Salinan *kalak?* ‘goose, crane’ (Mason 1918:123),
  - Uralic *\*kark-* ‘crane’ (UEW128),
- Comment:* Onomatopoeic. Further comparanda: Mongolian *\*qalayū* ‘goose’, *qarkira* ‘crane’.

*\*qǎq-č* ‘bitter, rotten’

- Mutsun *kakśa*, *kaśśa* ‘bitter’ (Mason 1916:465),
  - Uralic *kačke* ‘bitter’ (UEW113),
- Comment:* Further comparanda: Mongolian *\*qaqu* ‘sour, bitter’, (?) Yukaghir *qoyul* ‘rotten poplar’ (Nikolajeva 2006:383).

*\*qǎq-* ‘two’

- Salinan *kak?śu*, *xakis* ‘two’ (Mason 1918:153),
  - Esselen *kxulax* ‘two’, mixed up with *kxulep* ‘three’ (Shaul Appendix A),
  - Chimariko *qāqū* ‘two’, variant *xoku* is a loanword from Shasta *xukk’a* ‘two’,
  - Uralic *kakta* ‘two’ (UEW1118–19),
- Comment:* No comparanda in Mongolian or Yukaghir. Cf. *\*ikĩ-*.

*\*qǎHr* ‘raven’

- Mutsun *kakari* ‘raven’ (Mason 1916:429),
  - (?) Salinan *śkak?* ‘crow’,
  - Uralic *kvrnv* ‘raven’ (UEW228-29), Finnish *kaarne*,
- Comment:* somewhat phonosymbolic. Further comparanda: Yukaghir *qoyimə* ‘raven’ (Nikolajeva 2006:383), (with fronted *\*qe* > *\*ke*) Mongolian *\*kerije* ‘crow, raven’.

*\*sǎγ-* ‘to come’

- *\*say-na-* > *\*sana-*: Mutsun *sanae* ‘to come, draw near’ (Mason 1916:451),
  - Uralic: Finno-Permic *\*say-* ‘to come, obtain’ (UEW748-49),
- Comment:* scarcely attested. (?) Yukaghir *\*čanjd-* ‘to come to visit’ (Nikolajeva 2006:124), or better *\*seγ-*, *\*söγ-* ‘to bring in, enter’ (Nikolajeva 2006:409).

*\*śǎljǔq-* ‘tooth’

- Salinan *suluknai* ‘tooth’ (Mason 1918:128),
- Not in Uralic, but \**śal-* ‘to cut’ (UEW450–51) may be the original meaning,  
*Comment:* Further comparanda: Yukaghir \**saljǰəri-* ‘tooth’ (Nikolajeva 2006:394).

\**tjā-n-* ‘now’ < deictic *tja* + temporal case-marker

- (?) Mutsun *tśien* ‘now’ (Mason 1916:467), looks like \**tja-ši-n* ‘today’,
- Salinan *tana* ‘now’ (Mason 1918:152),
- Uralic: Mordvin \**tēni* ‘now’ (UEW748-49),  
*Comment:* Further comparanda: (?) Yukaghir deictic derivatives: *tileme* ‘now’ (Nikolajeva 2006:430), *tennit-tandalek* ‘from now on’ (Nikolajeva 2006:409).

(?) \**wālma* ‘wind’

- Costanoan III *ualma* ‘cold afternoon wind’ (Heizer 1952:15),
- Uralic Mordvin \**varma* ‘wind’, isolated word,<sup>14</sup>  
*Comment:* No comparanda in Mongolian or Yukaghir.

Comparanda with a long vowel *ā* (< (?) \**ǎH*):

\**āma-* ‘to extract, remove’

- Salinan *āmamp-* ‘to extract, withdraw’ (Mason 1918:138),
- Uralic \**āmære-* ‘to scoop (out)’ (UEW25), also *ama-* ‘to scoop (out)’ (UEW7–8),  
*Comment:* No comparanda in Mongolian or Yukaghir.

\**dāšt-* or \**dāts-* ‘star’

- Salinan *ṭatsuwan* ‘stars’, *ṭatsʷōpeʷ* ‘moon’ (Mason 1918:133),
- Uralic: Finno-Volgaic \**tāštā* ‘star’ (UEW793),  
*Comment:* An isolated word with no clear connections. If the word has a connection with PIE \**aster* ‘star’<sup>15</sup>, then the best reconstruction is \**dāšt-*.

\**hāje* ‘father’

- Esselen *haya* ‘father’ (Shaul appendix A),
- Uralic \**āja* ‘father (also husband, grandfather)’ (UEW609),  
*Comment:* Possibly older than \**ǎppǎ* or \**ǎtsě* ‘father’. Yukaghir \**oje* ‘father’ (Nikolajeva 2006:322). Cf. Central Miwok *hajʷi* ‘step-father’, with a striking similarity.

\**dāje-* ‘louse, flea’

- (?) Chimariko *ṭʰamina* ‘flea’,
- Salinan *ṭājiL* ‘flea’,
- Uralic \**tāje* ‘louse’ (UEW515),  
*Comment:* No comparanda in Mongolian or Yukaghir. Cf. PIE \**deigh-* > English *tick*.

\**kāš* ‘anger’

- Mutsun *śas* ‘anger’ (Mason 1916:432),
- Uralic Mokša *kež* ‘anger’, isolated word,

<sup>14</sup> The irregular change PU \*1 > Mordvin \*r is also attested in the word *erja* ‘to live’ < PU \**el-*.

<sup>15</sup> (?) with a *d* mobile as in \*(*d*)*akru* ‘tear(s)’, hence the unattested (?) \**daster*.

*Comment:* No comparanda in Mongolian or Yukaghir.

\**kāt* ‘hand, palm’

- Mutsun *śatta* ‘palm, sole’ (Mason 1916:432),
- (?) Salinan *keo* ‘knuckle’ (Mason 1918:127), (?) representing the bare root \**kā-*,
- Uralic \**kāte* ‘hand’ (UEW140),

*Comment:* An isolated word with no clear connections. Uralic \**kāme* ‘palm’ (UEW137) has another initial according to Yukaghir \**qanj-pə* ‘palm’ (Nikolajeva 2006:379).

\**māl-* ‘to remember’

- Salinan *malēntax* ‘to remember, think’,
- Uralic \**māl-* ‘to feel’ (UEW267–68), Vot *mālehtä-*, Estonian *māle(s)ta-* ‘to remember’,

*Comment:* No comparanda in Mongolian or Yukaghir. Yukaghir \**māl-* ‘to surprise’ is quite different semantically (Nikolajeva 2006:257).

\**mātt-* ‘tent, house’ < (?) \**ma<sup>2</sup>-*

- Chimariko *matta* ‘sweat-house’,
- Uralic \**mātt-* ‘house, hut, tent’ (UEW269),

*Comment:* Further comparanda: Mongolian \**majiḡan* ‘tent’.

\**qāw-* ‘to go, walk’

- Salinan *k<sup>2</sup>onox* ‘to arrive, reach’ (Mason 1918:143), *k<sup>2</sup>ōL-* ‘to arise, spring up’ (Mason 1918:143),
- Uralic \**kāwe* ‘to go’ (UEW654–55),

*Comment:* further comparanda: Yukaghir \**qon-* ‘to go, to walk’ (Nikolajeva 2006:385), \**qū-* ‘to jump, to go upward’ (Nikolajeva 2006:389),

\**tāw-* ‘full’ < (?) \**dayu-*

- \**tāwl-* > *tōl-*: Costanoan II *toolon* ‘full’ (Heizer 1952:32), Mutsun *tolon* ‘much’ (Mason 1916:440),
- (?) Salinan *tēlē<sup>2</sup>pmi* ‘full’,
- Uralic \**tāwd-* ‘full’ (UEW518),

*Comment:* Further comparanda: Yukaghir *tū-* ‘to fill, load’ (Nikolajeva 2006:437), (?) Mongolian \**düyüre* ‘full, complete’, dubious as initial *t* would be expected.

\**tāwe* ‘lung’ < (?) \**tayu-*

- Santa Cruz *tawe* ‘lung’ (Heizer 1955:162), (?) Costanoan II *taue* ‘ribs’ (Heizer 1952:10), (?) Mutsun *take* ‘ribs’ (Mason 1916:432),
- Salinan *tohol, tohul* ‘lung, gizzard’,
- Uralic \**tāwe* ‘lung’ (UEW519), Mokša *tewlal*.

*Comment:* Further comparanda: (?) Yukaghir \**lonlā-* ‘lung’ (Nikolajeva 2006:248) with irregular initial, which may be influenced by Yukaghir \**laq-* ‘lungs’ (Nikolajeva 2006:235).

Comparanda with a short vowel *ɨ* :

(?) \**ibān-* ‘tongue’

- (?) Salinan *epal*, *ipaL* ‘tongue’ (Mason 1918:126), apparently a “Hokan” borrowing,<sup>16</sup>
- Chimariko (*hi-*)*pen* ‘tongue’, *pen* ‘to lick’,
- (?) Uralic  $\approx ip$  ‘taste, smell’ (UEW83-84), rather confused data,  
*Comment*: further comparanda: (?) Yukaghir *\*wonor* ‘tongue’ (Nikolajeva 2006:458).

*\*ičě* ‘father’

- Chimariko *itsila-i* ‘father’,
- Uralic *\*ičä* ‘father’ (UEW78),  
*Comment*: further comparanda: Yukaghir *eče* (Nikolajeva 2006:150),  
Mongolian *\*ečige* ‘father’. Cf. *\*ič-* ‘large, big’.

*\*iki-* or *\*iqi-* ‘two, twin’

- Not in Cal-Uralic.
- Uralic *\*ki-kt* ‘two’ (UEW118–19), a variant of *\*qaq-t-*,  
*Comment*: further comparanda: Yukaghir *\*ki-* ‘two’ (Nikolajeva 2006:209),  
Mongolian *\*ikere* ‘twin’.

*\*ilīma-* ‘sky’

- Esselen *imi* ‘sky’ (Shaul appendix A),
- Salinan *lema* ‘sky’,
- Uralic *\*il[i]ma* ‘sky, weather, God’ (IEW81–82),  
*Comment*: no comparanda in Yukaghir or Mongolian.

(?) *\*īnu-* ‘to perceive, remember’

- Mutsun *inu* ‘to remember’,
- Not in Uralic,  
*Comment*: further comparanda: Yukaghir *ön-me* ‘mind, memory, conscience’  
(Nikolajeva 2006:333).

*\*īw-īr-*, *\*īw-m-* ‘thirst, need to drink’

- Santa Clara *uwēr* ‘to drink’ (Heizer 1955:163), Costanoan II *uēt* ‘to drink’  
(Heizer 1952:25),
- Uralic *\*ūr-* ‘to drink’ (UEW85),<sup>17</sup> Selqun Tym *ööra-* ‘to get drunk’, Uralic  
*\*im-* ‘to drink’ (UEW82–83),  
*Comment*: Further comparanda: Yukaghir *\*imm-* ‘drunk’ (Nikolajeva  
2006:254)<sup>18</sup>, Mongolian *\*umda-* ‘thirst’.

*\*jilā* ‘sun, daylight’

- Chimariko *alla*, *ulla* ‘sun’,
- Uralic *\*jelā* ‘sun, daylight’ (UEW96–97),  
*Comment*: Further comparanda: Yukaghir *\*jeljōdje* ‘sun’ (Nikolajeva  
2006:187), which may be a compound involving a cognate of Mongolian *\*ūd-*  
‘afternoon, day’: hence Yukaghir *\*jilā+ūd-*.

<sup>16</sup> Cf. Yuman *\*hinpal*, Seri *apL*, Tequistlateco *ipaL* ‘tongue’. Possibly a cognate between these languages but a probable borrowing in Salinan.

<sup>17</sup> Uralic apparently underwent a syllabic contraction. This verb is often associated with alcoholic drinks and drunkenness in Uralic languages.

<sup>18</sup> Nikolajeva reconstructs *\*ljum-* but the entry mixes several stems and meanings.

*\*j̥sũ* ‘joint, limb’

- Mutsun *is(s)u* ‘hand’ (Mason 1916:431), Costanoan I *hissa*, II *issu*, III *isu*, IV *is*, *iš* ‘arm’ (Heizer 1952:10), Soleda *isso* ‘arm’, *issu* ‘hand, wrist’ (Heizer 1955:161), Rumsen *is* ‘hand, arm’ (Heizer 1955:161, 174), Santa Cruz *issu* ‘arm’, *isu* ‘back of hand’ (Heizer 1955:161),
  - Uralic *\*j[ä]se* ‘limb, joint’ (UEW95), Hungarian *íz* ‘limb’,
- Comment:* Further comparanda: (?) Mongolian *\*sige-* ‘small finger’.

*\*kĩ-* ‘who’

- Esselen *kini* ‘who’ (Shaul appendix A),
  - Uralic *\*ki*, *\*ke* ‘who’ (UEW140–41),
- Comment:* Further comparanda: Yukaghir *\*kin-* ‘who’ (Nikolajeva 2006:211–12), Mongolian *\*ken-* ‘who’.

*\*kĩHã-* ‘wife, sister-in-law’

- (?) Mutsun *śa(u)na* ‘wife’ (Mason 1916:438),
  - Uralic *≈käl-* ‘sister-in-law’ (UEW135–36), Erzia *kijalo*,
- Comment:* Further comparanda: Yukaghir *\*kelj-* ‘brother-in-law’ (Nikolajeva 2006:205).

*\*kĩHĩ-* ‘to go (away), way’

- Mutsun *śii-* ‘to go for fire’, *śine-* ‘to go, walk’ (Mason 1918:453),
  - Salinan *kī* ‘to go’ (Mason 1918:143), *ki-tipa* ‘to march’ (Mason 1918:143),
  - Uralic Mordvin *ki* ‘way’, not the same as *\*kawe* ‘to go’ (UEW654–55),
- Comment:* further comparanda: (?) Yukaghir *\*kel-* ‘to come’ (Nikolajeva 2006:205), better *\*kewe* ‘to go away, leave’ (Nikolajeva 2006:209).

*\*lĩwa* ‘mud, earth, clay’

- Mutsun *luśun* ‘to be stuck in mud or clay’ (Mason 1916:450),
  - Salinan *loto?* ‘clay’ (Mason 1918:133),
  - Chimariko *lādido* ‘mud’,
  - Uralic *\*liwa* ‘mud’ (UEW250), also ‘sand’ which may be another root,
- Comment:* Further comparanda: Yukaghir *\*lewe* ‘land, earth’ (Nikolajeva 2006:241–42), (?) Mongolian *\*laj* ‘mud, dirt’.

*\*mĩrdje* ‘man’

- Mutsun *mirte*, *mitte* ‘adult man’ (Mason 1916:437),
  - Uralic Mordvin *\*mirdje* ‘husband’,
- Comment:* This word has a striking similarity with Proto-Indo-European *\*mṛtós* ‘mortal being, man’. Mordvin is usually considered to be from some Indo-Iranian source *\*mṛta*.

*\*mĩn-* ‘to go (fast)’

- Esselen *neni-* ‘to go’,
  - Salinan *mene* ‘to go to bring’ (Mason 1918:144),
  - (?) Chimariko *mum-* ‘to run’,
  - Uralic *\*mene-* ‘to go’ (UEW272), Estonian *min-*, Zyrian *mun-*,
- Comment:* Further comparanda: (?) Yukaghir *\*menmə-* ‘to jump’ (Nikolajeva 2006:266), Mongolian *\*meŋde* ‘to hurry’.

*\*nĩs* ‘mother-in-law’

- Mutsun *anaaknis* ‘stepmother’ (Mason 1916:437),
- Uralic *anja* ‘mother’ (UEW10), Erzya *niz-anja* ‘mother-in-law’,  
*Comment*: No comparanda in Mongolian or Yukaghir.

(?) *\*pĩtsĩ* ‘berry’

- (?) Chimariko *tšimiana* ‘serviceberry’, with loss of *pi-*,<sup>19</sup>
- (?) Salinan *ts’etakiL* ‘chuckberries [sic]’ (Mason 1918:130),
- Uralic *\*pićla* ‘berry, often of rowan trees’ (UEW376–78),  
*Comment*: no comparanda in Yukaghir or Mongolian.

*\*pića* ‘mist, dew’

- Soledad *pisa* ‘fog’, *pissaten* ‘clouds’, Santa Cruz *pišša* ‘cloud’ (Heizer 1955:163), Costanoan III *piša* ‘clouds’, Costanoan I *pišša* ‘mist’ (Heizer 1952:15),
- Uralic *\*pić* ‘dew, hoarfrost’ (UEW377),  
*Comment*: Further comparanda: (? dubious) Mongolian *\*sürči-* ‘to rain in small drops, sprinkle’ (? with loss of *pi-*)

*\*piqa* ‘belly’

- *\*piqti* > *\*pitti*: Soledad *piti*, Rumsen *pitin* ‘belly’ (Heizer 1955:161), Costanoan II *pitti* ‘belly’, Costanoan IV *pittus* ‘belly’ (Heizer 1952:10), (?) *\*piqtus* > *\*puttus*: Mutsun *puttus* ‘belly, abdomen’ (Mason 1916:432),
- Salinan *ika(n)* ‘belly’ (Mason 1918:127), with loss of initial *p*,
- Chimariko (*hi-*)*pxa* ‘intestines’, with spirant *q*,
- Uralic *\*pikkä* ‘belly’ (UEW379-80),  
*Comment*: No comparanda in Mongolian or Yukaghir.

(?) *\*qĩm-* ‘quail, pheasant’

- Salinan *homlik*<sup>2</sup> ‘quail’ (Mason 1918:126),
- Esselen *kumul* ‘quail’ (Shaul Appendix A),
- Not in Uralic,

*Comment*: Further comparanda: Mongolian *kemerleg* ‘pheasant’.

*\*siỹĩ-* ‘water’, *\*siỹül-* ‘saliva’,

- Mutsun *sĩ-* ‘water’ (Mason 1916:471), Costanoan I, II *sĩ*, III, IV *si* ‘water’ (Heizer 1952:15), *\*si* ‘water’ (Heizer 1952:163),<sup>20</sup>
- (?) Chimariko *šidulla* ‘spring’, possibly a compound: Cf. Komi *tu(l)-* ‘to surge (of water)’ (IEW532–33),
- Uralic Finno-Volgaic *\*sũlk-* ‘to spit’ (UEW479–80) < *\*siỹulk*, Ostyak *\*söjəγ-* ‘to spit’,  
*Comment*: Further comparanda: Yukaghir *\*sĩ(g)-* ‘brook, to drip’ (Nikolajeva 2006:406), *\*söγe* ‘saliva’ (Nikolajeva 2006:409), Mongolian *\*šũls* ‘saliva’, (?) *\*siγe-* ‘to urinate’, (?) *\*siỹüsü* ‘juice’.

*\*šilm(a)* ‘eye’

- Mutsun *sin-pur* ‘eyebrows’ (Mason 1916:431), Costanoan IV *sim-ppur* ‘eyelashes, eyebrows’ (Heizer 1952:9),
- (?) Chimariko (*hu-*)*sunsa* ‘eyelashes’,

<sup>19</sup> Chimariko *tšelina* ‘gooseberry’ is less interesting because it has *ts* instead of *tš*.

<sup>20</sup> Callaghan proposed a Usonianism Miwok *\*ki:k* ‘water’, but final *-k* is an issue.

- Uralic \*šilmε ‘eye’ (UEW479), Permic \*šín(m) ‘eye’,  
*Comment:* No comparanda in Yukaghir or Mongolian.

## \*sītŭ ‘tooth’

- Mutsun *sit* ‘teeth’ (Mason 1916:431),
- (?) Chimariko (*hu*)-*tsu* ‘teeth’, with metathesis or more probably a loanword from Shasta,
- Not in Uralic,  
*Comment:* Further comparanda: Mongolian \**sidü* ‘tooth’.

## (?) \*šiwǎdź- ‘to chew’

- (?) Chimariko *tsatsi* ‘to chew’, which represents \**ćáci-* or \**džadži-* rather than \**sos-*,
- Uralic \**soske-* ‘to bite, chew’ (UEW448–49),  
*Comment:* Further comparanda: Mongolian \**žažila-* ‘to chew’. The words exhibit a kind of assimilation of two different s(h)ibilants. The initial can be that of Uralic \**sew-* ‘to eat’ (UEW440), hence a derivative \**siwadź-* ‘to chew’, whence \**sōs-* or \**džadži-*.

## \*tiH- ‘to do’

- Salinan *tī-* ‘to do’,
- Uralic \**teke* ‘to do, make’ (UEW519), Mordvin *tij-*, *tej-* ‘to do’,  
*Comment:* This word has a striking similarity with Proto-Indo-European \**dheH<sub>1</sub>* ‘to do’. This is maybe a chance coincidence, though no comparanda in Yukaghir or Mongolian seem to exist.

## \*tiw- ‘feather’

- Mutsun *tiwi* ‘feather ornament’ (Mason 1916:433),
- Uralic \**tu-lka* ‘feather, wing’ (UEW535–36) is apparently another root,  
*Comment:* Further comparanda: Yukaghir *tiw-* ‘feather, wing’ (Nikolajeva 2006:231–32).

## (?) \*wīt- ‘seed’

- Mutsun *ittus* ‘seed’ (Mason 1916:431),<sup>21</sup>
- Uralic Mordvin \**vidjme* ‘seed’, isolated word,  
*Comment:* No comparanda in Yukaghir or Mongolian.

## \*žire ‘heart, organ’

- Mutsun *sire* ‘heart, mind’ (Mason 1916:431), Costanoan III *sire* ‘heart’ (Heizer 1952:10), Costanoan II, III *sire* ‘liver’ (Heizer 1952:10), Costanoan IV *sirre* ‘intestines’ (Heizer 1952:10), Soledad *side* ‘liver’, Rumsen *sire* ‘heart’, *siri* ‘liver’, Santa Cruz *sire* ‘liver’ (Heizer 1955:162),
- Uralic \**šerj(mε)* ‘kidney’ (UEW472–73), Saami \**čirmi* ‘kidney’, \**čidmi* ‘bowel’,  
*Comment:* Further comparanda: Mongolian \**žirūke* ‘heart’.

Comparanda with a long vowel  $\bar{i}$ :

## \*īč- ‘large’

<sup>21</sup> Initial \**w* is lost when the following vowel is \**i*.

- Costanoan IV *išak* ‘large’ (Heizer 1952:33), Rumsen *ishak* ‘grande’ (NN 1802:171),
  - Salinan (*k*)*etša*’ ‘large, great’ (Mason 1916:149),
  - Uralic *\*iç* ‘big’ (UEW78), Mokša *otsju* ‘big’,
- Comment:* No comparanda in Yukaghir or Mongolian.

*\*īm-* ‘old, elderly’

- (?) Mutsun *inteste* ‘elderly man’ (Mason 1916:437),
  - (?) Salinan *ama*’ ‘paternal grandfather’ (Mason 1918:133),
  - (?) Chimariko *amālulla* ‘old maid’,
  - Uralic *\*oma* ‘old’ (UEW337-38), also Uralic *\*im* ‘old woman’ (UEW83),
- Comment:* Further comparanda: Mongolian *\*ebügen-* ‘old man, grandfather’.

*\*wīd-* ‘new, young’

- Mutsun *iņas, iņas* ‘new’ (Mason 1916:461), Costanoan II *ičas*, Costanoan IV *iitti* ‘new’ (Heizer 1952:33), cf. Mutsun *tuṭa* ‘young man’ (Mason 1916:438),
  - Uralic *\*wudje* ‘new’ (UEW587), Mokša *od* ‘new, young’,
- Comment:* Further comparanda: (?) Yukaghir *\*ō:-* ‘young’ (Nikolajeva 2006:318–19), (?) Mongolian *\*id-er* ‘young, full of strength’.

Comparanda with a short vowel *ö* :

*\*böγ-* ‘kidney, testicle’

- (?) Salinan *oxot* ‘testicle’ (Mason 1918:127),
  - Uralic: only Volgo-Permic *\*wärk* ‘kidney’ (UEW817),<sup>22</sup>
- Comment:* Further comparanda: Mongolian *\*bo(g)ere-* ‘kidney, testicle’.

*\*bör-* ‘bride’

- Mutsun *uršes* ‘bride’ (Mason 1916:437),
  - Uralic Finno-Volgaic *\*oriwa* ‘bride, daughter-in-law’ (UEW722),
- Comment:* Further comparanda: Mongolian *\*beri-* ‘bride, daughter-in-law’.

*\*döm(p)-* ‘hill’

- Mutsun *tamar* ‘hill’ (Mason 1916:436), without expected initial *t*,
  - Salinan *ṭ’opo* ‘mountain’ (Mason 1918:133),
  - Ugric *\*domp-* ‘hill’ (UEW896), Hungarian *domb* has a peculiar voiced initial,
- Comment:* Further comparanda: Mongolian *\*dobu* ‘hill’.

*\*ögü-* ‘to kill’

- Chimariko *ko-* ‘to kill’, with loss of initial vowel,
- Comment:* Further comparanda: Yukaghir *\*oyud-* ‘to kill’ (Nikolajeva 2006:109), Mongolian *\*ügü-* ‘to die’.

*\*köje-* ‘man, people’

- Salinan *k<sup>?</sup>wel* ‘people’ (Mason 1918:134),
  - Uralic *\*koje* ‘man’ (UEW166–67),
- Comment:* No comparanda in Yukaghir or Mongolian.

*\*korq* ‘throat’

<sup>22</sup> The UEW suggests a borrowing from Indo-Iranian *\*wrd-k*, *\*wrkk-* ‘kidney’, which is phonetically unlikely.

- Mutsun *śorkoos* ‘throat’ (Mason 1916:432),
- Uralic *\*kurke* ‘throat’ (UEW676),

*\*kowt* ‘shoe’

- Mutsun *śotoś* ‘shoe’ (Mason 1916:434),
- Uralic *\*kowt-* ‘snow shoe, ski’ (UEW674-75),

*\*lōHw-* ‘to drink’, *\*lōH-pa* ‘wet’

- Chimariko *lū-* ‘to drink’,
  - (?) Uralic (approximative reconstruction) *≈loppa* ‘wet’ (IEW693),
- Comment:* Further comparanda: Yukaghir *\*law-* ‘to drink’ (Nikolajeva 2006:236).

*\*mōla* ‘butterfly’

- Mutsun *mumullalluk* ‘butterfly’ (Mason 1916:427),
  - Salinan *mal-* ‘to fly’ (Mason 1918:143),
  - Uralic Mokša *melaw*, (dial.) *(mo)melu* ‘butterfly’, isolated word,<sup>23</sup>
- Comment:* Further comparanda: (?) Yukaghir *\*molljə-* ‘gadfly’ (Nikolajeva 2006:272), (dubious) *\*mere*, *\*more* ‘to fly’ (Nikolajeva 2006:266),

(?) *\*mōš-* ‘breast(s)’

- Mutsun *muse* ‘full-breasted’ (Mason 1916:462), Soledad, Rumsen, Santa Cruz *mus* ‘breast’ (Heizer 1955:161), Costanoan III *mus*, Costanoan IV *muš* ‘female breasts’ (Heizer 1952:10),<sup>24</sup>
  - (?) Uralic *\*müšk* ‘protruding body part: hump, pregnant’ (UEW703),
- Comment:* Further comparanda: [babytalk] Yukaghir *\*momo-* ‘milk’ (Nikolajeva 2006:273–74), Mongolian *\*mōmu* ‘breast’.

*\*ōdī*, *\*(ō)dülka* ‘feather’

- Mutsun *uṭel* ‘ear-ornament of feathers’ (Mason 1916:433),
  - Salinan *oṭewots’o’* ‘feather’ (Mason 1918:127),
  - Uralic *\*tulka* ‘feather, wing’ (UEW535–36),
- Comment:* Further comparanda: Mongolian *\*odi*, *\*ōdū* ‘feather’. Yukaghir *tiw-* ‘feather, wing’ (Nikolajeva 2006:231–32) is another root: Mutsun *tiwi* ‘feather ornament’ (Mason 1916:433).

(?) *\*pō(n)ča-* ‘skin’

- (?) Salinan *s(p)anat’* ‘skin, hide’, (?) with metathesis,
  - Uralic *po(n)ča* ‘skin (on reindeer leg)’ (IEW394–95),
- Comment:* No comparanda in Yukaghir or Mongolian.

*\*qōn* ‘elbow’

- *\*qōnlōwl* > *kullul*: Costanoan II *kulluliš* ‘elbow’ (Heizer 1952:10), Rumsen *kululse* ‘elbow’, Santa Cruz *kululis* ‘elbow’ (Heizer 1955:161),<sup>25</sup>
  - Uralic *\*küne* ‘elbow’ (UEW158-59), Vogul *konlowl* ‘elbow’,
- Comment:* Further comparanda: (?) Yukaghir *\*qonqə-* ‘to bow’ (Nikolajeva 2006:387). Compare *elbow* and *bow* for the semantic connection.

<sup>23</sup> Better attested in the form PU *\*liHp*.

<sup>24</sup> Callaghan suggests here a Utianism with Miwok *\*mu* ‘breast’, *\*musu* ‘milk, to suckle’. This may indeed be a better solution, as Uralic data are not especially homogeneous and conclusive.

<sup>25</sup> The morpheme *-is* certainly is the same as *issu* ‘limb, arm, hand’.

\*šō ‘charcoal’

- Mutsun *suw, sus* ‘charcoal’,
- Uralic \*šüdje ‘charcoal’ (UEW477-78), Finnish *syd-*,  
*Comment*: No comparanda in Yukaghir or Mongolian.

\*tōye- ‘to bring, give’

- Esselen *toxesa* ‘to give’ (Shaul Appendix A),
- Uralic \*tōye ‘to bring, give’ (UEW529–30),  
*Comment*: Further comparanda: Yukaghir \*tē- ‘to give’ (Nikolajeva 2006:236),  
Mongolian *ta’u* ‘to give, distribute’.

\*tō- ‘to fly’

- Chimariko (*hu-*)*tu* ‘feather, wing’, *tu* ‘to fly’,
- Uralic \*tulga ‘feather, wing’ (UEW535–36),  
*Comment*: No comparanda in Yukaghir or Mongolian.

Comparanda with a long vowel *ō* :

\*mōn- ‘to speak’

- Mutsun *monse* ‘to advise’, *monsie* ‘to relate, recount’ (Mason 1916:448),  
with \*mōn- > non-: Costanoan II *nonue*, III *nonuei* ‘to speak’ (Heizer  
1952:25),
- Uralic \*mon- ‘to say’ (UEW290-91), Hungarian \*mond- ‘to say, name, (dial.)  
to speak’,  
*Comment*: Further comparanda: Yukaghir \*mon- ‘to say’ (Nikolajeva  
2006:274).

Comparanda with a short vowel *ǔ* :

\*gǔl-m, \*gǔlapa ‘three’

- Mutsun *kapśan* ‘three’ (Mason 1916:439),
- Salinan *k(l)apai* ‘three’ (Mason 1918:153),
- Esselen *kxulep* ‘three’ (Shaul appendix A),
- Uralic \*kolme- ‘three’ (UEW174),  
*Comment*: Further comparanda: Mongolian \*gurban- ‘three’.

\*hǔm- ‘belly’

- \*humt- > \*hutt-: Mutsun *śut(t)u* ‘belly, abdomen’ (Mason 1916:432), Santa  
Cruz *hutu* ‘belly’ (Heizer 1955:161), Costanoan II *huttu* ‘abdomen’ (Heizer  
1952:10),
- Uralic \*omte ‘belly, cavity’ (UEW338),  
*Comment*: Further comparanda: Mongolian \*umaday- ‘lower part of belly’.

\*juH-q- ‘to drink’

- \*juHq- > ukk-: Mutsun *ukk(vsi)*- ‘to drink (water)’ (Mason 1916:445),  
Costanoan IV *ukkes* ‘to drink’ (Heizer 1952:25),
- Uralic \*juH/k- ‘to drink’ (UEW103), Saami \*jukk- ‘to drink’,  
*Comment*: Further comparanda: Mongolian \*ayu-, \*uyu- ‘to drink’.

\*(ku)-<sup>2</sup>aka- ‘long, distant’

- Salinan *k<sup>2</sup>wāka* ‘long, tall’ (Mason 1918:150),

- Uralic *\*kauka-* ‘long’ (UEW132)<sup>26</sup>, Mordvin *kuwaka* ‘long, distant’<sup>27</sup>,  
*Comment:* Further comparanda: (?) Mongolian *\*au-* ‘large, broad’.

*\*kükt* ‘belly’

- Mutsun *šut(t)u* ‘belly’ (Mason 1916:432),  
 - Uralic *\*koko-* ‘belly’ (UEW670),

*\*küHpa* ‘boil’

- Mutsun *šupur* ‘carbuncle’ (Mason 1916:432),  
 - Uralic *\*kuppa* ‘boil’ (UEW213-14),

*\*küni* ‘arm’

- Mutsun *šunyois* ‘arm’ (Mason 1916:432),<sup>28</sup>  
 - Uralic *\*koni-ala* ‘armpit’ (lit. ‘under the arm’) (UEW178),

*\*pük-sä-* ‘arrow’

- (?) Chimariko *atsibuksa* ‘arrow-flaker’, if a compound, Cf. *-at-* ‘to hit’,  
 - Uralic *~pekšä* ‘arrow’ (UEW369),

*Comment:* Further comparanda: Yukaghir *\*puki-* ‘arbalest (arrow)’ (Nikolajeva 2006:367), (dubious) Mongolian *\*sum(un)-* ‘arrow’.

(?) *\*pür-* ‘old’

- (?) Mutsun *parane* ‘grandmother’ < (?) *\*por+ana* ‘old mother’ (Mason 1916:438),  
 - Uralic *\*por-* ‘old’ (UEW737),

*Comment:* No comparanda in Mongolian or Yukaghir.

*\*qŷγ-vl-* ‘to die’

- Chimariko *qè* ‘to die’,  
 - Uralic *\*kola* ‘to die’ (UEW173), Tavgi *\*kuʔa-*, Selqup *qu-*,  
*Comment:* Further comparanda: (?) Yukaghir *\*qōl-* ‘to kill’ (Nikolajeva 2006:384), *\*qoγej-* ‘to kill (an animal)’ (Nikolajeva 2006:383).

*\*tŷpra* ‘lip’

- Mutsun *tutper* ‘lips’ (Mason 1916:432),  
 - Uralic *\*turpa-* ‘lip’ (UEW801), a metathesis of *\*tupra* according to Mutsun,  
*Comment:* No comparanda in Yukaghir or Mongolian.

*\*ŷd-* ‘to sleep’

- *\*oden* > *eden*: Mutsun *eŷe-n* ‘to sleep’ (Mason 1916:442), Costanoan II *hečen*, III *ečen* ‘to sleep’ (Heizer 1952:25),  
 - Uralic *\*od(a)-* ‘to sleep’ (UEW334-35), Mordvin *\*ud-* ‘to sleep’,  
*Comment:* No comparanda in Yukaghir or Mongolian.

*\*ŷm-* ‘to sleep, doze’

- Salinan *me* ‘to sleep’ (Mason 1918:144),

<sup>26</sup> This root interferes with Germanic *\*hauka* ‘high’ in Balto-Finnic.

<sup>27</sup> In Mordvin the prefixal nature of the first syllable of *kuwaka* is shown by the fact this word is stressed on the second syllable, which happens to be the diachronic stem: *\*kuʔauka* > *kuwaka*.

<sup>28</sup> The morpheme *-is* certainly is *issu* ‘limb, arm, hand’.

- (?) Uralic Finno-Volgaic *\*on-* ‘sleep, dream’ (UEW805), Cheremis *omo-* ‘sleep’,

*Comment:* Further comparanda: Yukaghir *\*mal*, *\*mol-* ‘to doze, sleep’ (Nikolajeva 2006:256–57), Mongolian *\*umta-*, *\*unta-* ‘to sleep’.

*\*ušim-*, *\*učim* ‘to drink’

- Salinan *išim* ‘to drink’ (Mason 1918:144),

- (?) Esselen *etse*, *eše* ‘to drink’ (Shaul appendix A),

- Uralic Finno-Volgaic *\*šem-* ‘to drink’ (UEW773), Mordvin *\*šim-* ‘to drink’,

*Comment:* Further comparanda: Yukaghir *\*ončə-* ‘to drink, water’ (Nikolajeva 2006:406) < (?) *\*očmə-*, (?) Mongolian *\*usu-* ‘water’.

Comparanda with a long vowel *ū* :

*\*čū* ‘yellow’

- Mutsun *tšutsun* ‘green’ (Mason 1916:465), Costanoan III *čutku* ‘green’ (Heizer 1952:32),

- (?) Salinan *ṭ(š)awat* ‘yellow’ (Mason 1918:151),

- Uralic *\*čoša* ‘yellow’ (UEW621-22), Mordvin *\*tjuža*,

*Comment:* Further comparanda: (? dubious) Yukaghir *\*söjl-* ‘brown, yellow’ (Nikolajeva 2006:406).

*\*kū* ‘long ago’

- Mutsun *kus* ‘in the olden times, once upon a time’ (Mason 1916:467),

- Uralic Mordvin *kunara* ‘long ago’, possibly a derivative of *\*ku* ‘wh-words’ (UEW191),

*Comment:* No comparanda in Yukaghir or Mongolian.

*\*xūj-* ‘to swim’

- Mutsun *yuya* ‘to swim’ (Mason 1918:447),

- Chimariko *xu-* ‘to swim’,

- Uralic *\*uj-* ‘to swim’ (UEW542),

*Comment:* Further comparanda: Yukaghir *\*(w)e-* ‘to swim’ (Nikolajeva 2006:150), Mongolian *\*ojim-* ‘to swim’.

*\*tūm-* ‘to know’

- Mutsun *tuman* ‘(to be) able’ (Kroeber 1904:72),

- Uralic *\*tum-t-* ‘to know, perceive’ (UEW536–37),

*Comment:* No comparanda in Yukaghir or Mongolian.

## 11. Conclusions and perspectives

This preliminary survey of Costanoan, Esselen, Chimariko and Salinan as compared to Uralic shows that these languages, that I propose be called ‘Cal-Uralic’, definitely contain lexical material of Uralic origin. It appears that they even seem to be closer to Finno-Ugric than they are to Samoyedic. To some extent this means that they deserve to be included within Uralic as a new subbranch. This also raises the issue of the time-

depth of the relationship between Samoyedic, Cal-Uralic and Finno-Ugric. It seems probable that Cal-Uralic is a quite recent newcomer in the Americas.

Mason (1916:405) makes an interesting observation about vowel harmony in Mutsun: “There appears also to be a feeling for vocalic harmony [sic], and some suffixes are varied to the end that their vowel may correspond and harmonize with the characteristic or stem vowel of the word. Thus, *sumi-ri-ni*, but *towo-ro-ste*; *xana-ksa*, but *tare-kse*.” Such phenomena can be expected in a language of Uralic origin. Further works need to be dedicated to grammatical or morphological features to consolidate the status of Cal-Uralic within Uralic and West-Siberian.

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UEW: *see* Rédei, Károly (ed). 1988.