Language Convergence Between Closely Related Languages: A Case Study in Yuman
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In this paper[1], it will be shown that closely related languages that are in contact undergo a good deal of convergence, and that this convergence can often complicate attempts at reconstruction. The examples presented here will serve to illustrate the fact that reconstruction does not represent the speech patterns of a homogeneous speech community at a point in time, but rather is the sum result of an accumulation of traits that have been gained over time by a set of languages or dialects, in contact, that may already be quite divergent over the latter part of this period. Illustrations will come from the Yuman language family, shown on the map in figure 1.

Related languages are apt to influence each other quite differently than unrelated languages. In a family like Yuman, where recognizable cognates abound, if two languages have different sounds these sounds have a one-to-one correspondence with each other--for example, if one language has $\underline{\check{c}}$ and another has $\underline{s}$ in the same words, $\underline{\check{c}}$ and $\underline{s}$ will be considered to correspond to each other by a speaker familiar with both languages. (Speech patterns that differ only dialectically are of course the extreme case of correspondence; but the correspondences are present to some degree for all Yuman.) There are many interesting influences on the process of language change that can be predicted on the basis of the fact of correspondence. One is that assuming the appropriate sociolinguistic conditions are present for this convergence, we can predict that, in our example, the language without $\underline{\check{c}}$ will derive it by a shift from the corresponding $\underline{s}$ -- not from some other source. However, if two unrelated languages come into contact, one of whom has $\underline{\check{c}}$ and one of whom has $\underline{s}$, but without correspondences between them, there is no special reason why these two segments should begin to converge. The language without $\underline{\check{c}}$ is just as likely, in a situation of convergence, to develop $\underline{\check{c}}$ from $\underline{t}$, for example (perhaps more likely, since $\underline{t}$ is more similar to $\underline{\check{c}}$ than $\underline{s}$ is, in terms of distinctive features.)

Unrelated languages, then, may develop convergent structures in conditions of contact, but may undergo quite different sorts of shifts in order to do so. Related languages, on the other hand, are more likely

Figure 1: Map of the Yuman Languages

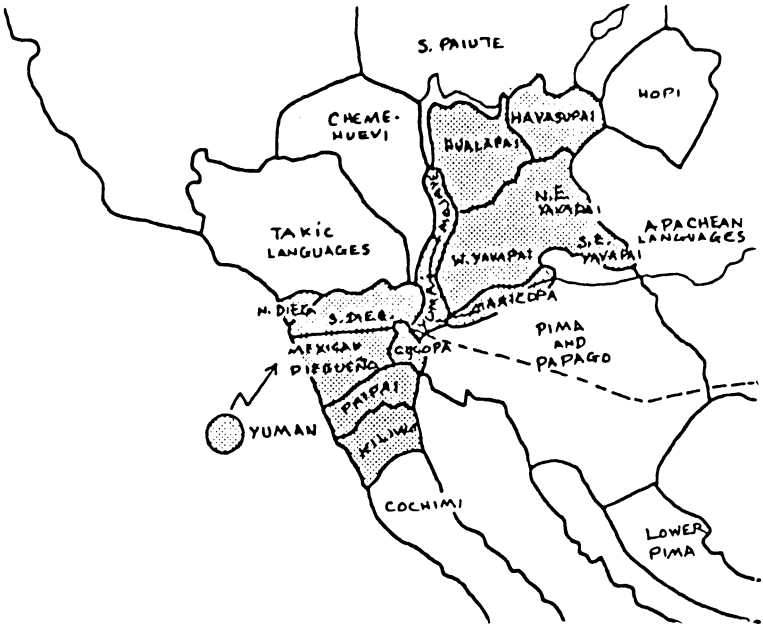
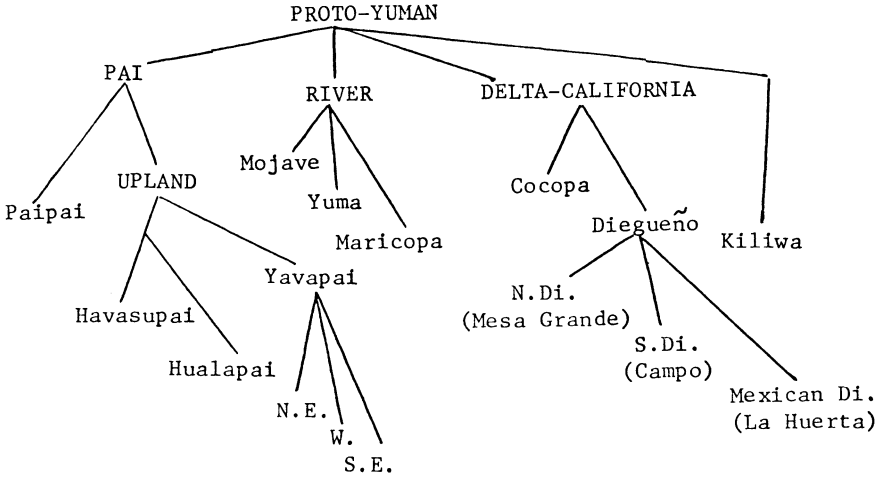


Figure 2: Internal classification of the Yuman languages



to undergo identical sound shifts and identical grammatical changes. The resultant structural similarities, then, are not always possible to distinguish from inherited similarities. This sort of process is probably most important in what I will call a "community of dialects"-- defined as groups of interacting speech communities which maintain a constant degree of dialect similarity over time--not because the dialects do not change, but because when one dialect changes, pressure operates to either wipe out that change over time, or for the other dialects to follow suit. Thus communities of dialects undergo constant convergence even at the same time that they maintain a certain degree of difference.

The Yuman language family

The favored subgrouping within the Yuman family is shown in figure 2. There are four quite clearly defined branches of the Yuman family-- Pai, River, Delta-California, and Kiliwa. Kiliwa is an isolate within the Yuman family, but the other three branches have within them several communities of dialects that probably do or once did have the stable, mutually-converging relationship that I introduced above. Upland Pai is such a community at the present time and probably has been for many centuries. The River languages used to be such a community, although historical events over the last couple of centuries have served to isolate Mojave. Dieguẽño, on the other hand, seems to have more internal diversity than the other two groups of dialects, and appears to have been following a pattern of divergence.

The prehistory of Yuman appears to be quite complex, with much migration of Yuman peoples within the geographic range of the family, and with various extensions and contractions of the range at different periods in time (Hinton, ms.) The clear genetic subdivions within Yuman probably derive from periods of relative isolation of various branches. The examples of convergence between languages within the Yuman family that I will show here point to a present areal division between the Northern part and the Southern part of the Yuman range. I will refer to these areal divisions as Northern Yuman and Southern Yuman. This areal division is made clear by the fact that members of some of the subbranches of Yuman are found in both areas. For example, Mojave shares certain traits with the Upland Pai languages (Havasupai, Hualapai and Yavapai) that it does not share with its close relatives Yuma and Maricopa. Similarly, Paipai, located

in the Southern area, is distinguished from its Upland Pai relatives by certain traits that it shares with its neighbors.

Northern Yuman phonological traits

The following traits are shared between Upland Pai and Mojave.

(1) Proto-Yuman *ʂ and *s shift to s and θ respectively. This shift is one I have studied in some detail previously (Hinton, 1979, 1982). Since all Upland Pai underwent the shift, it has previously been thought to be reconstructable for Proto-Upland Pai, with Paipai correctly supposed to retain the older form. It also seemed possible to conclude that Mojave underwent the soundshift as a result of contact with Upland Pai. Looking at 19th century documents, however, has shown us that this sound shift did not take place until the latter half of the nineteenth century, long after the Upland Pai dialects were already separated from each other, and that it was Mojave that first underwent the soundshift, which spread from that language across the Upland Pai languages-- first to Hualapai, then to Havasupai and the Yavapai dialects. Were it not for these documents, the true facts of the history of this sound shift would have been impossible to ascertain.

(2) Alveolar flapped r as primary variant. All Upland Pai probably used to have it (but Havasupai and Hualapai has since shifted to d); Mojave has a flapped r now; the other River languages have a trill instead. Again contact between Mojave and Upland Pai is indicated. Kroeber described r for Mojave as a trill in the early 20th century, although as he said, "the tip of the tongue is flicked (only) a few times against the top of the gums". This is in contradistinction to Maricopa and Yuma, which are always described as having an extremely strongly trilled r. More recent fieldworkers--Wares in the '60's and Munro in the '70's--have found Mojave r to be a simple flap. It appears, then, that Mojave completed a shift from a trill to a flap in the 20th century. Mojave is most like Yavapai with regard to this trait: both Yavapai and Mojave have the flap as the primary variant, and both have a trill as a stylistic variant.

(3) Proto-Yuman *x and *x^w shift to h and h^w. This occurs in Upland Pai and Mojave; all other Yuman languages retain x and x^w. I have less information on the time-depth of this shift than on the others. It may be old in Upland Pai, but I am not prepared to commit myself to that stance, since it is obvious from the previous examples that a sound shift can travel very fast in this community of dialects. Since of the River Languages, only Mojave has undergone the shift, it is likely to be recent for Mojave.

Notice that most of the convergence that has taken place between Mojave and Upland Pai can be demonstrated to have been quite recent, around the 19th century, and even the 20th. Contact between Hualapai and Mojave was greatly increased beginning in the mid-nineteenth century, due to historical events involving mounting pressure from Anglos. In the case of the sibilant shift, Hualapai underwent the shift as a result of contact with Mojave, and then in turn provided the contact impetus for the change in Havasupai and Yavapai. What I am calling the Northern Yuman area, then, is really quite young--perhaps a century old. But by studying such recent areal influences as these, we begin to develop an understanding of how important it is to incorporate areal considerations into the process of comparative reconstruction.

One thing that Northern Yuman teaches us is that language convergence may often proceed in bursts, as the result of short-term intensified contact. Such contact may last for a generation or two, due to all sorts of imaginable social and environmental factors, and then de-intensify again. Alternatively, contact may be more stable and more long-term, of the sort found between the various members of the Upland Pai community of dialects. The sort of convergence that we see between Upland Pai dialects is probably a process that has been going on for many centuries, where a change occurring in one speech community gets transferred to other members of the community of dialects, thus maintaining a constant high degree of similarity, at the same time that other language groups in a social situation of lesser or no contact will diverge radically.

Furthermore, the Northern Yuman area illustrates something that we already know well: convergence may be the result of "indirect" contact.

Southern Yuman phonological characteristics

As we turn to Southern Yuman, we see that it does not show the homogeneity of areal influence that we see in Northern Yuman. We see various traits held in common between different groups of languages, rarely between all of them. In Southern Yuman, then, we are probably viewing an accumulation of independent "bursts" of convergence, occurring during periods of intensive contact between various Yuman languages, along with other features gained through more stable contact situations--the latter probably being those between members of communities of dialects.

(1) lenition of subject suffix, reconstructed as *-$\overset{v}{c}$ in Proto-Yuman.
Mesa Grande has $\overset{v}{c}$, $\overset{v}{j}$, d, as variants for the subject marker;
Cocopa has t^{y} for subject markers;
La Huerta has t^{y} for subject marker;
Paipai has t^{y} or y for subject marker.
Other Yuman languages have not lenited the subject marker appreciably. This trait is especially interesting because of the fact that while the process of lenition is held in common between these languages, the phonetic character of the subject marker is not identical across languages. What we observe is increasing lenition from north to south among the languages affected.

(2) change of $\overset{v}{c}$ (other than in subject marker).
Kiliwa *$\overset{v}{c}$ > t before European contact;
Cocopa *$\overset{v}{c}$ > s before European contact;
Yuma *$\overset{v}{c}$ > s in the 19th and 20th century.
Maricopa *$\overset{v}{c}$ > $\underset{v}{s}$ in the 19th and 20th century.

Once again we see a sound shift that has much in common across languages but which does not result in identical segments.

(3) development of ɬ and $ɬ^{y}$.
Cocopa and Diegueño have ɬ and $ɬ^{y}$ well-installed;
Yuma has ɬ fairly well-installed (but no $ɬ^{y}$);
Kiliwa has ɬ and $ɬ^{y}$) in sound symbolism;
Paipai has ɬ in loan-words.

Other Yuman languages do not have it.

(4) fricative r
Cocopa has it as one variant;

Mesa Grande Diegueño has an alveolar approximant with slight frication as the most common r morpheme;
Kiliwa has a uvular fricative for r.

We see here an indication of a possible alveolar or retroflex fricative held in common at one time, with subsequent independent changes.

(5) loss of k^y. This occurs in Cocopa, Diegueño, and Kiliwa.

Lexical and syntactic traits

I have concentrated so far on phonological traits, but of course lexical and grammatical traits in Yuman also have an areal distribution of interest. I will present only a few of these.

Numerals

In Langdon and Munro's paper on Yuman numerals (1980) they show that 1,2,and 3 are clearly cognate in all Yuman languages (although with some problems). 4 and 5 are reconstructible except for Kiliwa. No other numbers can be reconstructed for Proto-Yuman. They write,

> "In general, the Upland [Pai], Mojave, and Kiliwa systems may all be described as additive, while the Diegueño, Cocopa, and Yuma-Maricopa systems are multiplicative. Paipai has a mixed system synchronically, which can be accounted for by its having recently borrowed the terms for 'seven', 'eight, and 'nine' from neighboring Diegueño."[2]

Similarly, one of the Mojave counting systems shares the word for 9 with Havasupai, Hualapai, and Yavapai. In general Mojave higher numbers are not cognate with Upland Pai, but the system is identical (i.e., additive) until 10.

Auxiliaries

Langdon (1978) reconstructs auxiliary verbs in the Proto-Yuman verb phrase as shown below.

Primary inflected verb	(-*k	inflected locative auxiliary	(-*k	inflected behavioral auxiliary)

Thus the Proto-Yuman verb phrase had a primary inflected verb which was suffixed by -*k if it took an auxiliary; this verb was optionally followed by an inflected locative auxiliary or by an inflected behavioral auxiliary, or both. The locative auxiliaries are verbs such as "sit", "stand", etc., used to indicate position of the subject while doing an action; these are obligatory in some modern languages. The most common behavioral auxiliaries translate roughly as "be", "do", and "say", according to the semantic class of the main verb. They play various modal or aspectual roles in the verb phrase, or sometimes function simply as utterance-final markers.

Some modern Yuman languages display the postulated Proto-Yuman constructions, while some have specialized, losing one or the other of the auxiliary types, or displaying it uncommonly. A brief summary of the auxiliary constructions in modern Yuman follows.

Mojave preserves all constructions postulated for Proto-Yuman. It has an -m ending common on the behavioral auxiliary.
Yuma double auxiliaries are rare; locationals are by far more common than behaviorals.
Maricopa shows -m on the behavioral auxiliary like Mojave, and has the full set of options. I believe the double auxiliary is very rare. (Gordon, 1980.)
Cocopa has the full set of options.
Diegueño exhibits the loss of the same-subject marker. It has an obligatory locational auxiliary, but lacks the behavioral auxiliary.
Kiliwa preserves all of the options.
Paipai has the full set of locational auxiliaries. The behavioral auxiliary is less common.
Havasupai, Hualapai, and Yavapai locational auxiliaries are very rare. There is an obligatory behavioral auxiliary. Yavapai has sentence-final -m after the behavioral auxiliary, anomalous in Pai, and remarked upon by Langdon as follows: "[It] may in fact be attributable to Mojave influence since it is in that language a very common predicating morpheme, particularly on verbs of the behavioral set"(p 123).

Langdon goes on to say,

> "...The behavioral constructions of Paipai would be hard to account for as an innovation since they so clearly parallel those of the River subgroup. The only possible argument would have to consider influences from its closest neighbor, Diegueño, with which it does in fact share a number of features. But it should be remembered that the Paipai behavioral construction is unlike the Diegueño one in a number of fundamental ways which would then have to be explained." (p. 123.)

Several patterns of similarity emerge across Yuman branches:

> (1) Mojave, Maricopa, and Yavapai share an -m on the behavioral auxiliary;
>
> (2) Paipai shares with Diegueño and Yuma an emphasis on the locational auxiliary and deemphasis of the behavioral auxiliary;
>
> (3) the use of the double auxiliary is uncommon or nonexistent in Pai, River and Diegueño; it is apparently standard only in Kiliwa and Cocopa. This suggests the possibility that the double auxiliary construction was not common in Proto-Yuman.

I would like to suggest an alternative to Langdon's analysis of Mojave and Paipai as retaining the earlier state. In Mojave, double auxiliary constructions occur only with "be", not "do" or "say"; "do" or "say" appear in single auxiliary constructions lacking a locational auxiliary, making them look much like Upland Pai. Thus Mojave and Upland Pai share much in common, while the more closely related languages, Mojave and Yuma, are different in that Yuma does not have such a common behavioral auxiliary construction. Given the close genetic relationship btween Mojave and Yuma, it seems likely that the Mojave trend toward greater use of the behavioral auxiliary at the expense of the locational auxiliary may be result of contact with Pai. Also the Paipai emphasis on the locational auxiliary is probably the result of recent contact with Southern Yuman. Differences between Diegueño and Paipai auxiliary construction can be seen as the result of the latter's Pai

heritage.

Indefinite pronouns

All Yuman languages either have a ma root or a ka (or ki) root for the indefinite pronouns, or a root consisting of both. Standard techniques of reconstruction suggest reconstructing the Proto-Yuman form as having both. But the pattern is areally interesting: Havasupai, Hualapai, and Yavapai have only ka; Cocopa, Diegueño, and Kiliwa (two different branches) have only ma (Kiliwa also has a p element we won't discuss here); Paipai, Mojave, Yuma, and Maricopa have both. Geographically, we find the north has ka, the south has ma, and the central area of Yuman has the combination. The standard rule of thumb for comparative reconstruction would be that both were present in Proto-Yuman, that the central area is the most conservative, and that the peripheral areas have changed. However, it is clear that Paipai has borrowed some of the indefinite pronouns from its neighbors, especially Diegueño, with whom Paipai shares some identical forms. The reconstruction of *ma-k for Proto-River is indicated here, but there is no evidence that we can take it further back in Yuman prehistory than that. Instead, I am inclined to suggest a Proto-Pai *ka, and a general Southern Yuman *ma (without making claims as to whether it is to be reconstructed for Proto-Yuman), and that the combined forms are the result of contact.

CONCLUSIONS

I believe I have shown ample evidence that various subsets of Yuman languages have undergone many instances of convergence. In some cases, this convergence is easily observable because it has taken place between members of different branches of Yuman. In other cases, we have observed that all members of a subbranch have undergone convergence, an event which would be impossible to reconstruct without documents. Similarly, it is quite probable that many traits that we label as "Proto-Yuman" were in fact acquired through language contact between already divergent languages at various periods in Yuman prehistory.

We must keep in mind, then, that when we reconstruct a Proto-language, we are not reconstructing the language of a homogeneous speech community at a certain point in time. Instead, we are reconstructing a set of shared traits accumulated over time by a set of closely related languages or dialects in contact. Even as they diverge, new traits may sweep across the

languages, driven by social forces that govern contact and linguistic attitudes between speech communities.

FOOTNOTES

1. I would like to thank Pamela Munro for her helpful comments on this paper. Discussions with Margaret Langdon also helped to form my ideas on this topic.

2. An "additive" system is one in which the higher numbers are expressed as some constant with a number added to it -- for example, in Havasupai the number seven is hwakspé, that is, "2 plus 'spé'"(the meaning of 'spé' need not concern us here). A "multiplicative" system is one in which the higher numbers are expressed in terms of numbers multiplied together: for example, 3 x 3.

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