The Bipartite Stem Belt: Disentangling Areal and Genetic Correspondences

Author(s): Scott DeLancey

Proceedings of the Twenty-Second Annual Meeting of the Berkeley Linguistics Society: Special Session on Historical Issues in Native American Languages (1996), pp. 37-54

Please see “How to cite” in the online sidebar for full citation information.

Please contact BLS regarding any further use of this work. BLS retains copyright for both print and screen forms of the publication. BLS may be contacted via <http://linguistics.berkeley.edu/bls/>.

The Annual Proceedings of the Berkeley Linguistics Society is published online via [eLanguage](#), the Linguistic Society of America's digital publishing platform.

The Bipartite Stem Belt: Disentangling Areal and Genetic Correspondences

Scott DeLancey
University of Oregon

Even where genetic relationship is clearly indicated ... the evidence of diffusion of traits from neighboring tribes, related or not, is seen on every hand. This makes the task of determining the validity of the various alleged Hokan languages and the various alleged Penutian languages all the more difficult ... [and] point[s] up once again that diffusional studies are just as important for prehistory as genetic studies and what is even more in need of emphasis, it points up the desirability of pursuing diffusional studies along with genetic studies. This is nowhere more necessary than in the case of the Hokan and Penutian languages wherever they may be found, but particularly in California where they may very well have existed side by side for many millennia. (Haas 1976:359)

The term "bipartite stem" (Jacobsen 1980) refers to a pattern of compound stem construction found in northern California and Oregon, which crosses genetic boundaries, occurring in Hokan and Penutian languages, but also seems to roughly correlate with plausible genetic subunits (Northern Hokan, Plateau Penutian + Maiduan). While the pattern has clear functional analogies to patterns of stem construction in Salish, Wakashan, Algic, and other North American languages, its specific structural manifestations clearly distinguish the languages of what I am calling the "Bipartite Stem Belt" from those to the north and south of it. Different aspects of this bipartite stem pattern appear to be different ages, so that their distribution in the area suggests a chronology of various prehistoric contacts. This evidence is consistent with other linguistic and archaeological evidence, and can potentially be used to bolster and complement recent suggestions about Penutian dispersal.

The pattern shows the most elaborate development in a "core area", a set of languages including at least Washo, Klamath, Sahaptin, Yana, and Atsugewi. (Some or all of Molala, Achumawi, and Shasta very likely belong to this core area as well, but the situation is not clear from the data available to me). Elements of the

pattern are shared in many surrounding languages, particularly Nez Perce, Maiduan, Pomoan, and to an extent Numic; this larger set of languages is what I mean by the Bipartite Stem Belt.

1 Elements of an areal pattern

The areal pattern which we are discussing has been recognized since the beginning of systematic California linguistics (Dixon and Kroeber 1919, Sapir 1916, Taylor 1961, Jacobsen 1966, Sherzer 1976, DeLancey 1988). Discussion of its defining features is often couched in terms of "instrumental prefixes" and "locative(-directive) suffixes". While they have the advantage of familiarity, these terms are misleading in two important ways--in the assumption of greater (in the case of the "instrumentals") or less (in the case of the "locatives") semantic specificity than the categories of the languages actually manifest, and in the implication, contained in the words "prefix" and "suffix", that we are dealing with a clearly grammatical as opposed to lexical phenomenon. At the most general level, we are better to refer simply to initial and final stem elements, or simply "initials" and "finals". For the more specific grammatical categories which define the bipartite stem pattern I will refer to "lexical prefixes" (LP's) and "locative-directive stems" (LDS's).

1.1 Lexical prefixes

The principal feature which has historically been recognized as subject to areal spread in Northern California is a set of initial stem elements, usually but not always analyzed as prefixes. In all of the languages which have this category some or all of the members can have reference to the shape of an instrument, and the category is traditionally referred to as "instrumental prefixes". But in all languages for which I have data some members of the category can also refer to the shape of a Theme argument, and in the more elaborated systems characteristic of our area bound stems referring to manner of motion also occupy this same positional slot. In the core languages the positional category also includes a motley set of bound stems with no discernable semantic connection to any of these fields.

We find the closest approximation to a truly "instrumental" category in languages like Maiduan, Takelma, and Numic. In all of these most of the prefixes or initial stem elements index a body part or

the shape of an object, but some express more abstract adverbial notions, while the shape classifiers may index an instrument or some other kind of argument, typically a Theme (DeLancey 1991a). For example, in Konkow (Maiduan) /bó-jolmì:n/ 'bash w. a rock-like instrument', the prefix |bʷ| classifies an instrument, but in /bó-ki:n/ 'rock-like obj. is lying, put rock-like obj. down' it indexes the Theme of a predicate referring indifferently to location or motion (intransitive or transitive). Likewise in Takelma the 17 body-part prefixes often express the instrument with a transitive verb, but they can also index object arguments of various semantic functions, and several of them also have semantically extended functions reminiscent of the "adverbial" LP's of Sahaptian or the adverbial functions of some LP's in Klamath. A similar pattern is reported for the Numic languages, where similar-sized sets of prefixes, primarily but not exclusively referring to body parts, have a semantic range extending beyond instrumentality to include "liquid, heat, and cold ... degree or direction of force, location, transitivity, and also other grammatical features" (Nichols 1974:155). Both the Takelma and the Numic categories are directly relatable to noun-incorporation constructions, though the inventory (particularly in Numic languages) will include morphemes whose nominal origins are quite opaque. It is worth noting here a conclusion that I will suggest later, that the existence in a LP system of a certain number of members whose lexical origin is transparent is not in itself an argument for the recent origin of the category, as languages with such a category tend to continue to recruit new members, and to lose old, resulting in a slow relexicalization of what may otherwise be relatively stable categories. A very similar pattern, as distant genetically and geographically from either of these as they are from one another, is found in Pomoan. Again, the size of the stem-initial category is quite similar, and the semantic range quite comparable, to the languages we have just discussed (Oswalt 1976:15-7).

In the core languages, we find much larger and more elaborated sets of initial stem elements, of sufficient semantic variety to make it impossible to retain the term "instrumental" even for its sentimental associations. In Klamath, for example, there is a category of initial stem element which, while it includes a number of morphemes referring to body parts or shape categories as instruments, also includes elements which index the shape or other semantic category of a Theme argument, morphemes referring to

manner of motion, and a miscellaneous set with no particular semantic coherence. Since no more specific term accurately describes the set, I adopt Jacobsen's (1980) term "lexical prefix", adapted from Salishan studies (where "lexical suffix" refers to a functionally similar category of stem-final elements), for the equivalent set of initials in Washo. These "prefixes" appear to have more than one origin; some are quite clearly verbs, and the bipartite stems which they form are at least etymologically best thought of as verb compounds. Jacobs specifically notes the same thing of the Sahaptin LP category:

it cannot be maintained that anterior roots are true prefixes; tagging them prefixes or alternatively, anterior roots or quasi-roots, does not properly describe their usage, which varies from nearly genuine prefixation to true compounding and in some cases complete root independence. (1931:153-4)

Even for the much smaller and more cohesive LP category in Maiduan, the analysis of the category is subject to debate: Dixon (1911) and Ultan (1967) label them prefixes, but Shipley (1964) considers the Maidu LP's "root morphemes", while noting that this is as much a historical as a synchronic question.

A very intriguing pattern is that the LP's in many of these languages share similar phonological profiles and behavior. They are typically phonologically light, and in a geographically and genetically diverse range of languages (Nez Perce, Klamath, Washo, Maiduan, Pomoan) they undergo some degree of vowel harmony with the stem to which they are attached--even when the language does not otherwise show vowel harmony. This fact definitively ties the languages that share it into an areal complex; we can imagine two languages independently, or semi-independently, innovating an instrumental or more general lexical prefix category--a noun incorporation construction would be a typical source--but there is no imaginable reason why Pomoan and Maiduan, for example, would both independently develop a vowel harmony rule applying only to this category.

1.2 Locative-directive stems

Languages of this area are rich in lexicalizations of this subcategory of motion verb, representing elaborate classifications of the semantic field of direction, path, and location (as opposed to types and manners of

motion like 'go', 'walk', 'run', etc.). Stems representing this semantic category are not, of course, necessarily an overtly distinct grammatical category, but one of the characteristic features of the bipartite stem pattern is some degree of grammaticalization of verbs of this type.

We can illustrate the specialization of the category with Chinookan, which is otherwise not a participant in the bipartite stem pattern. Dyk (1933) describes the existence in Wishram of what are clearly in some sense bipartite stems: "rather loose combinations of two-stems ... easily broken up in their component parts each of which is freely combined with others" (1933:76). (He also notes the existence of "several" compound stems one or both elements of which are unique to them; a feature widespread among languages of the Bipartite Stem Belt proper). The order of elements is fixed, that is, there is a set of initial and another of final compounding elements, with no overlap. Members of each class can also occur as independent simple stems. Initial stems are apparently a large open class, but there are only something like 40 final elements, and only half of these combine productively. These also occur independently; all are "intransitive verbs of motion with specific directional connotations" (p. 77) which as finals combine only with primary motional stems. In compound stems they are exactly parallel to the locative-directive "suffixes" of Klamath or the "posterior roots" of Sahaptin.

Examination of Aoki's magnificent dictionary (1994) of Nez Perce provides a very similar picture. There are about three dozen verb stems which he states occur only preceded by a LP. About half of these have meanings related to motion or direction. As in Wishram, they combine predictably with motional initials, but they also occur with LP's with other (e.g. shape-classifying) meanings:

(1)áhsa 'to (go) up', as in |co-láhsa-| 'lift a pole' ({cú:-} 'with a pointed object or a pole-like object), |wa:-láhsa-| 'fly, jump up; ({we:-} 'fly, move fast'), etc.

Almost all of these begin with a morphophonemically variable /l/, which may be the remnant of an older morphological mark of verb concatenation. Several of these are transparently analyzable, showing recent expansion of the category; for example {(1)áhtq'i} 'out of water; up and out', analyzable into {láhsa} 'up' and the verb stem {taq'í:} 'out of water, come to shore'.

In Klamath we find a much larger set of locative-directional stems, with well over 100 members. Except for their number, these are very like the corresponding category in Nez Perce: they are bound morphemes, occurring always as the final element of a compound stem (though certain of them can occur after others); they have unique morphophonemic behavior, each having a characteristic initial vowel which surfaces only with certain initial stem elements (see DeLancey 1991); and they combine freely with both motional and shape-classifying initials. As in Nez Perce, a few members of the category are clearly recent developments, showing that the category has continued to expand over time, but most are synchronically opaque and not related to any independent stem.

The Nez Perce LDS's clearly represent a highly grammaticalized category: a relatively small (15-20) set of bound morphemes, with characteristic morphophonemic behavior. The Chinookan category is less grammaticalized; though it is about the same size, the fact that its members occur as free as well as bound stems immediately makes us think more of lexical stems than grammatical affixes. The Klamath pattern deviates in the other direction; as in Nez Perce, these are a closed class of bound morphemes, with peculiar and characteristic morphophonemic behavior--but there are ten times as many, with concomitant semantic variety and specificity. Nevertheless it is clear that we are looking here at essentially the same phenomenon, and, given the geographical proximity of the historic distribution of the languages, it is hardly imaginable that its occurrence in all of them is coincidental.

Here in a nutshell we can see the problem with the traditional "stem" vs. "affix" model, as several scholars have recently noted (Jacobsen 1980, Langdon 1990). In Wishram, there can be no question of the verbal nature of the LDS's, since they occur freely as motion stems in their own right. Aoki has no choice but to analyze the Nez Perce stems as verb stems, despite their bound status, because they fall into exactly the same two stem classes as all other verbs. Barker calls the Klamath category suffixes, but in fact the same argument can be made as in Nez Perce for considering them to be ultimately verbal in nature. As we will see below, while Klamath lacks the luxuriant stem alternations of Yok-Utian or Takelma, it does show two very interesting irregular stem classes: -i'-stems and n-stems. Both of these are probably quite old; the n-stems probably represent inheritance from Proto-Plateau, and the -i'-stems very possibly from Proto-Penutian. Both categories are well-represented among

the locative-directive "suffixes", which thus in a fundamental and organic way behave like other verbs in the language.

1.3 A taxonomy of bipartite stem types

The typological complex which we have to sort out here is more complicated than simply a matter of possessing both instrumental prefixes and locative-directive suffixes. The core languages are characterized by the fact that a majority of the verb stems of the language are bipartite, consisting of a LP and a second element. The second element is not always a LDS, but typically most or all of the potential second elements in a language are bound morphemes which cannot occur without a LP (raising further problems for a simple stem vs. affix analysis). In Washo, Yana, Klamath, and Sahaptin, at least, there are several different kinds of bipartite stem, depending on the type of LP and second element. I will use Klamath data to illustrate; Jacobs' description of Sahaptin, Jacobsen's of Washo, and Sapir's of Yana mention all of these, and each language has one or two additional minor types. Talmy (1974), in his description of Atsugewi, works harder to reduce the semantic range to a unified, rather abstract principle, but examination of his examples suggests that the overall system is similar.

Klamath has about 500 simplex stems, but the majority of stems consist of two (or occasionally more) bound elements. These bipartite stems are of four types (DeLancey 1995ms). LP's referring to instruments or actions combine with stems referring to a change of state. Most of these change-of-state stems can occur unprefixd, in which case they are intransitive; with an instrumental LP they are transitive, e.g. /ntew'-/ 'break, shatter a surface with a round instrument' ({n-} 'round instrument', {tewi} 'thin surface to break, shatter'). LP's referring to the shape or other semantic category of a Theme argument combine with bound LDS's to create stems, which can be used both intransitively and transitively: e.g. /lew'-/ 'puts a round obj. into water, flat place (intr. also)' ({lv} 'round object', {ew} 'in(to) water, a flat place'). LP's referring to manner of motion also combine with LDS's, creating complex motion verbs. e.g. /howw'-/ 'run, jump into water, flat place' ({hod} 'sg. run, jump', {ew} (as above)). We must also recognize a miscellaneous category of LP's or combinations of LP and final which do not fit any of the above categories: /dalmni/ 'looks up' ({d*lv} 'look' and {amni} 'up, upstream, uphill'), /lgacw'-/ 'has a stripe on the hair,

head' ({1G°} 'striped', {acw} 'on the head, hair'). There is also a significant number of bipartite stems one element of which occurs only in that stem and no other, and other bound stem elements which do not easily fit into any of the general classifying, instrumental, motional, or change-of-state or LDS categories.

2 A comparative problem: Plateau Penutian and Maiduan

The classic Sapirean version of Penutian recognizes three major groupings in our area: Californian, consisting of the four California stocks (Miwok-Costanoan, Yokutsan, Wintuan, and Maiduan), Oregon Penutian, consisting of Takelma, Kalapuya, and the Coast Oregon languages, and Plateau, consisting of Sahaptian, Molala-Cayuse, and Klamath-Modoc. (Chinookan, Tsimshianic, and "Mexican Penutian" were the other branches (1929/1990)). While there is increasing evidence for the validity of something like Sapir's Plateau branch, the "California Penutian" unit, inherited from Dixon and Kroeber's pioneering work, has turned out to be a phantom. That is not, of course, to say that there is no evidence that these languages are related--but there is no factual basis for a claim that they compose a unified subgroup of Penutian to the exclusion of other putatively Penutian languages (cf. Hymes 1964), and it is now established that Wintuan (Whistler 1977) and Maiduan (Shipley and Smith 1977) represent separate, independent migrations, almost certainly from different proximate origins; very possibly they are related at no shallower level than Proto-Penutian.

2.1 Klamath as a Penutian Language

I will not discuss lexical evidence for a Penutian affiliation for Klamath and Sahaptian here, except to assert that there is as much evidence for the relationship of Klamath to Yokuts, and for Klamath to Maiduan, as for Yokuts and Maiduan, and thus no argument on the basis of lexical evidence for a special relationship between Maiduan and Yokuts which excludes Klamath. Moreover, Klamath shows some fossilized structural features which make it look more Penutian than is sometimes assumed. As Silverstein points out, the evidence from Takelma and Yok-Utian suggests that, in a language related to these, we should expect "morphological debris found at the end of stems, irregularities in lexical form under derivation and

inflection" (1979:660). Although Barker's presentation of his data in terms of "morphophonemes" obscures the similarities to other languages, Klamath does in fact have stem classes of verb characterized by irregularity in their derived and inflected forms. The oldest and most interesting from a comparative Penutian point of view are the glottal and i-stems. A number of Klamath verbs have a final /i/ before consonants, but not vowels. Most of these also have the final glottal morphophoneme which Barker writes as |'|. This glottalizes a preceding sonorant when the |i| is not realized; thus with the stem {qewi} 'break in two' we get forms like /qew'a/ 'break in two', with the |i| lost before a vocalic suffix, and the stem sonorant therefore glottalized, vs. /qe:witk/ 'pl. broken, destroyed', with the |i| retained before a consonant, and the glottalization therefore lost. While we cannot directly equate this irregularity with similar patterns in other languages unless we can identify specific cognate stems, it is intriguingly reminiscent of stem alternations in Yokuts.

2.2 Klamath and Sahaptian

The genetic relationship between the Sahaptian family (Sahaptin and Nez Perce) and Klamath is recognized even by conservative Penutian skeptics as very plausible, and considerable lexical and grammatical evidence has been presented for it (Aoki 1963, Rude 1987, DeLancey, Genetti and Rude 1988, DeLancey 1991b). These languages also share both the bipartite stem pattern and several specific roots participating in it, both as initials and finals.

For example, Nez Perce {wílé:} 'run, move quickly', which Aoki (1970) analyzes as a LP, and Klamath {wle} 'run (few, four-legged animal)', which Barker analyzes as a bound verb stem which requires a LDS, in fact have identical compositional behavior, occurring in both languages only in compounds like:

Nez Perce: /wila-láhsa-sa/ 'I am running uphill' ({láhsa} 'to (go) up'), /wile-léhne-ce/ 'I am running down' ({léhne} 'down, downward, downhill'), etc.

Klamath: /wle-qwe:L-/ 'few, four-legged animals run down a hill' ({eqwe:L} 'down the hill, out of a tree, downslope'), /wle-Yanc'-/ 'few, four-legged animals run along the edge of a cliff, along a bank' ({oYn} 'along a mountainside, cliff, twisting riverbank;'), etc.

Given the correspondence in form and meaning and in position class and combinatorial behavior, the two stems are indubitably cognate. (This is one of the most widely attested and best known pan-Penutian etyma; cf. Shipley 1966). We have good reason to suppose that their status as bound motional stems which occur with grammaticalized LDS's is likewise common inheritance from Proto-Plateau.

But this hypothesis entails that the existence of a specialized class of LDS's occurring as bound final elements of bipartite stems is common inheritance, which in turn implies that at least some members of this category in the two languages should be cognate. And examination of the bound second-position stem elements with which this etymon combines in the two languages does turn up a few plausible cognates; the most promising that I have noted are:

NP {(1)eylé:k} 'into (typically into a hole)'; Kl. {(o)ne:g} 'in(to) a hole'

NP {(1)áhtq'i} 'out of water; up and out', composed of {láhsa} 'up' and {taq'í:} 'to come out of water, to come to the shore', cp. Kl. {(o)tq'ag} 'up out of (as water, dirt, a hole, etc.)'; also possibly related here are NP {(1)éht} 'out'; Kl. {(o)dg} 'out of a container', {(o)dG} 'taking away, removing, depriving',

NP {(1)éhyek}, 'upstream, upriver' and {letíyek} 'high'; Kl. {(o)ye:g} 'up, raising, lifting'

NP {lawí:} 'to leave (sometimes to get food)'; Kl. {(o)wi} 'spreading out, scattering'

However, four plausible sets (and a few more speculative similarities) among the 15 or so LDS's in Nez Perce, and the 125 or so in Klamath, is not an impressive showing. If the sets given here are valid, then, since they correspond in grammatical category as well as form and meaning, they constitute sufficient basis to attribute this bound category to the proto-language. Nevertheless, the small number of cognates, and the huge disparity in size between the sets in the two languages, demonstrates considerable independent secondary development in the daughter languages.

Thus though there is some reason--in the overall structural parallelism and the close correspondence of isolated elements of the system like *wile--to attribute parts of this stem composition system to a common ancestor of Sahaptian and Klamath, it is

nevertheless clear that there have been extensive independent developments in the languages since their separation, including in particular the innovation in one or (almost certainly) both of many new members of the various bound stem classes.

In fact, the same is true even within Sahaptian. It is easier to find strong resemblant pairs of LP's or bound LDS's between Nez Perce and Sahaptin than for either of those and Klamath, but still a very substantial number of both initials and finals are unique to one Sahaptian language or the other. Some sets establish specific independent developments in the two languages. For example, Aoki (1994) lists as a bound LDS in Nez Perce {(l)éhyek} 'upstream, upriver', and an independent verb stem {toláy} 'go upstream'. In Jacobs 1931 we find the Sahaptin "posterior root", i.e. a bound stem, {-tuni-} 'upstream', cognate to the Nez Perce independent stem. Thus we see that the two languages have chosen different roots to grammaticalize for this meaning. This is a recurrent pattern in the languages of the Belt: indications that the LP's and LDS's are quite old as grammaticalized categories, together with data showing continual expansion of the categories and replacement of forms over time.

2.3 Plateau Penutian and Maiduan

From the earliest days of Penutian research Maiduan has been recognized as distinctly unlike the other (California) Penutian languages in its use of instrumental prefixes and locative-directive suffixes, both unknown in any of the other four California groups. Both Dixon and Kroeber (1919) and Sapir (1916) ascribe this to contact with the northern Hokan languages Washo, Achumawi, Atsugewi, and Yana. Once the California Penutian hypothesis is abandoned, however, precisely these facts about Maiduan stand out as a strong structural correspondence with the Plateau languages. Both Klamath and Sahaptian have extensive series of initial instrumental or adverbial and final LDS elements. There is a small body of promising lexical and grammatical comparisons suggesting a special connection within Penutian between Maiduan and Klamath and Sahaptian, a possibility which would fit well with Shipley and Smith's (1979) evidence for relatively late migration of Maiduan into its historic area.

While Maiduan shares LP's, grammaticalized LDS's and bipartite stems with the Plateau languages, the fact that these are also shared with its Hokan neighbors should cause us to proceed with caution in

attributing the similarities to cognacy, since it raises the possibility that the development of the pattern in all of the languages is an areal phenomenon which postdates the breakup of their nearest common ancestor. There are structural differences: Maiduan languages have only 15-20 members of each of LP's and LDS's. Thus its LDS inventory is comparable to that of Nez Perce, but much smaller than Klamath or Sahaptin. From available descriptions Maiduan does not seem to have a large store of bound initials of any type. Shipley (1964:38-9) notes that Maidu does have compound stems, including stems with incorporated nouns and compounds of two verb stems as well as stems involving a LP. Still, from the available data, Maiduan seems to have a significantly less extensive bipartite stem system than the Plateau languages.

Closer examination, however, does turn up some parallels. For example, Maidu {welé} 'run' occurs, like its evident Sahaptian and Klamath cognates, as the first member of bipartite stems with a second directional element: /welé-doj/ 'run up (a hill, a staircase)', /welé-no/ 'run, run along', /welé-sito/ 'run across', etc. Thus it shares combinatorial behavior as well as form and meaning with the Plateau forms. Unlike these, however, it apparently also occurs unsuffixed: Shipley (1963:185) lists the form /hán-welè/ 'run holding something in the arms' ({hán} 'transport by carrying in the arms'). No corresponding construction with this root would be possible in Klamath or Sahaptian, where it occurs only as an initial with a LDS final.

We have, then, no grounds to posit *wile as a bound initial for the common ancestor of Plateau and Maiduan, as we tentatively can for Proto-Plateau. Still, the similar behavior and corresponding order are significant of something, as we can see by comparing it with the functionally equivalent construction in Takelma, also putatively Penutian and spoken at no great distance from the other languages. Takelma has a set of grammaticalized LDS's, similar in size and semantic range to the corresponding categories in Nez Perce and Maiduan (Sapir 1912/1990). But in Takelma these are initial rather than final elements of the stem. Thus built on hi-wiliw-, the Takelma cognate to Plateau *wile, we have compound stems like dal-hiwili¹-gw- 'run off into brush with', with the locative-directive prefix dal- 'away into brush, among, between' and xam-hiwili² 'ran to the water' (xam- 'in river'). Thus, regardless of to what extent it might be possible to equate particular Takelma morphemes with Sahaptian, Klamath, or Maiduan forms, the compound

constructions of these languages on the one hand and Takelma on the other must represent independent developments.

There are a few forms among the LP and LDS series in Maiduan with plausible Plateau connections, most notably the instrumental prefix {w} 'sticklike instrument', cp. Kl. {w} 'with a long instrument', Nez Perce {we} 'with chopping instrument', {wet} 'stick-like object'. This even appears in a couple of possibly cognate bipartite stems. Both parts of Maidu /wyk'y't-daw/ 'cut off' and Kl. /w-gatt'-/ 'chop in two, chop down' correspond well, and only slightly weaker is Konkow /wí-c'it'-in/ 'split a small obj. with an instrument', Kl. /w-cic'-/ 'split something thin with a long instrument'.

This list of comparisons pertaining to the bipartite stem system could be extended a bit with a bit more space, and probably slightly further with a bit more research, but it is clear that by far the greater part of the modern bound categories in Maiduan, Sahaptian, and Klamath are secondary independent developments. But once we have even a few substantive comparisons of this sort, we have sufficient basis to reconstruct some form of the bipartite stem pattern for a common ancestor of Plateau and Maiduan. However, we cannot reconstruct anything like the luxuriant development of that pattern which we find in Klamath and Sahaptin--indeed, it is doubtful whether that can be reconstructed even for Proto-Plateau. At most we can reconstruct a more modest system like that found in the Maiduan languages, with a few LP's and a few grammaticalized LDS's. Very possibly even the latter is a later development; we could explain the parallels that we observe if we reconstructed only a somewhat productive construction involving concatenation of motion stems, with manner stems preceding locative-directives.

3 Toward a prehistory of the bipartite stem pattern

We have seen that those aspects of the bipartite stem pattern which Klamath and Sahaptin, languages of the core area, share with Maiduan can plausibly be attributed to a common ancestor which they share at a (considerably) lower level than Proto-Penutian. But, of course, those aspects of the pattern which are shared with the other core languages, all Hokan, cannot be so interpreted. From this we can argue that the attested system of Klamath and Sahaptin must have developed in at least two stages. The initial innovation or adoption of the basic pattern--a LP

category, specialized LDS's, and compounding of motion verbs into bipartite stems--must precede the breakup of Plateau-Maiduan, while the dramatic expansion of the grammaticalized categories and the dominance of the bipartite pattern in the verbal lexicon must postdate it. Moreover, we must suppose a geographical movement of Maiduan in the interim, to remove it from the core area where the areal efflorescence of the bipartite stem pattern took place.

As we have noted, something like the core pattern is found in Washo, Atsugewi, and Yana, probably Achumawi, and perhaps Shasta and Chimariko. Except for Washo, all of these belong to Sapir's postulated Northern Hokan branch. The pattern is not found throughout the branch, however; Karok definitely does not belong, though Haas (1980) discovered fossilized evidence for an earlier instrumental prefix category. There is no evidence in Haas' data of an LDS category: the second elements which she is able to reconstruct are almost all change-of-state or other manipulative predicates, and none appear to be locative-directive elements. Pomoan has a well-developed but relatively small (~20) LP category, and a significant number of bipartite stems, but I don't know to what, if any, extent there is a clearly grammaticalized LDS category.

So we have some elements of the pattern throughout the Hokan languages of Northern California, though it appears that Pomoan, and even more Karok, behave as outliers to the area in this respect. The most significant, geographically non-marginal exception to this picture of northern California and eastern Oregon is Wintuan, as Sapir noted long ago (1916). Wintuan has no trace of anything like our LP category. It does have a highly grammaticalized LDS set, but, as in Takelma, these are initial rather than final elements of the stem. This structural correspondence to Takelma is striking in light of the evidence given by Whistler (1977) and Golla (1993) for a relatively recent northern origin for the Wintuan languages.

Though it is still rough, this assemblage of facts suggests a chronology of areal developments and population movements. We can posit a time when the Northern Hokan languages (regardless of whether or not this turns out to be a valid genetic grouping) were all spoken in a compact and contiguous area, with Proto-Plateau-Maiduan and ancestral Washo nearby, to the northeast and east, respectively. At an early date we can link Takelma with this areal complex as well. This is the period when the LP construction, whatever its origin, spread through all of the languages. The absence of any evidence of LP's in Wintuan implies that

at this date it was spoken still farther north than the point of origin from which it moved into California. This hypothetical areal pattern must be quite old, and it is much less well-defined by synchronic data than the subsequent stages.

The next areal wave, involving grammaticalization of LDS's and the development of bipartite stems not involving instrumental/classifying prefixes, apparently excluded Karok and Takelma; where Pomoan stands in this development is not entirely clear, but my current interpretation is that it participated to some extent in this second stage. This again would appear to have been early. The comparative facts outlined above suggest that this stage was still prior to the breakup of the common ancestor of Plateau Penutian and Maiduan, which implies that, if Northern Hokan including Karok is a genetic unit, it is of somewhat greater time depth than Plateau-Maiduan; it specifically implies that the split of Hokan, and perhaps Pomoan, from Northern Hokan preceded that of Maiduan from Plateau.

The third wave of areal influence is the hypertrophy of the bipartite stem system in the core languages. As we have seen, this affected Washo but apparently missed Maiduan; it also seems to have affected Sahaptin somewhat more than Nez Perce. This obviously places this wave subsequent to the breakup of Plateau, and probably even of Sahaptian. It also has some implications for the geographical relationship of these languages at this time: Sahaptin and Klamath must be in close contact, with Nez Perce somewhat peripheral. This is more-or-less the historic situation. It also places Maiduan at some geographical remove from Klamath and Sahaptin, which again is consistent with historic locations. But Washo, presumably, must have been farther north, in closer contact with Atsugewi and Klamath, than it is at present. Pomoan clearly was not a participant in this development; if it should turn out that Achumawi and/or Shasta are, like Atsugewi and Yana, core Bipartite Belt languages, that implies that this last wave postdated the incursion of Wintuan into the Central Valley--an event which would have insulated Pomoan from areal developments to the east of the Valley.

One problem with this outline involves Numic, all the languages of which have a modest lexical prefix system comparable to those of Maiduan or Pomoan. If I want to attribute the rest of the distribution of this category to an areal spread, then presumably Numic must have been a participant in this complex. But I have just argued that this stage of the areal development occurred quite early, while Uto-Aztecanists in general

consider the Numic expansion northward through the Great Basin to be quite recent. If the Numic facts are not to constitute a threat to my hypothesis, I need to have the Numic languages--or, more likely, a relatively undifferentiated late Proto-Numic dialect complex--residing far enough north to participate in the areal pattern at least 2,000 years ago, and probably a good bit earlier. There is controversy here already; I will only point out here that many archeologists find the posited recent spread and divergence of Numic quite problematic. For example, Aikens and Witherspoon (1986) place ancestral Numic in the desert areas of the Great Basin (which were not constant over time) from shortly after the initial breakup of Proto-Uto-Aztecan. This model fits much better with my data, and would lend itself to the interpretation that Numic might well have been the original source for the lexical prefix pattern. Jacobsen (1966) points out that a Numic dialect complex remaining relatively stable over a long period of time, while an unorthodox idea among linguists, is not necessarily implausible. (In this connection he also suggests Numic as a possible source for the lexical prefix pattern in Northern California, which in light of the present research remains an intriguing possibility).

- Aikens, C. Melvin, and Y. T. Witherspoon. 1986. Great Basin Numic prehistory: Linguistics, archeology, and environment. C. Condie and D. Fowler, Anthropology of the desert West. 8-20. Salt Lake City: University of Utah Press.
- Aoki, Haruo. 1963. On Sahaptian-Klamath linguistic affiliations. IJAL 29:107-12.
- _____. 1970. Nez Perce texts. UCPIIL 62.
- _____. 1994. Nez Perce dictionary. UCPIIL 122.
- Barker, M.A.R. 1963. Klamath dictionary. UCPIIL 31.
- _____. 1964. Klamath grammar. UCPIIL 32.
- DeLancey, Scott. 1988. Klamath stem structure in genetic and areal perspective. S. DeLancey, Papers from the 1988 Hokan-Penutian Languages Workshop, 31-39.
- _____. 1991a. Event construal and case role assignment. BLS 17:338-53.
- _____. 1991b. Chronological strata of suffix classes in the Klamath verb. IJAL 57:426-45.
- _____. 1992. Klamath and Sahaptian numerals. IJAL 58:235-39.
- _____. 1995ms. Lexical prefixes and the bipartite stem construction in Klamath.
- _____. 1996. Argument structure of Klamath bipartite stems. presented at the SSILA meeting, San Diego.

- _____, C. Genetti, and N. Rude. 1988. Some Sahaptian-Klamath-Tsimshianic lexical sets. W. Shipley, In Honor of Mary Haas: From the Haas Festival Conference on Native American linguistics, 195-224. New York: de Gruyter.
- Dixon, Roland B. 1911. Maidu. F. Boas, Handbook of American Indian languages, part I, 679-734.
- _____, and A.L. Kroeber. 1919. Linguistic families of California. UCPAE 16(3):47-118.
- Dyk, Walter. 1933. A grammar of Wishram. Ph.D. dissertation, Yale University.
- Golla, Victor. 1993ms. Alsea (& Siuslaw, Coosan) - Wintu (& Patwin) comparisons.
- Haas, Mary. 1980. Notes on Karok internal reconstruction. Klar 1980:67-76.
- Hymes, Dell. 1964. Evidence for Penutian in lexical sets with initial *c- and *s-. IJAL 30:213-42.
- Jacobs, Melville. 1931. A sketch of Northern Sahaptin Grammar. U. Washington Pub. in Anthropology 4.2:85-292.
- Jacobsen, William. 1966. Comments on linguistics. W. d'Azevedo et. al., The current status of anthropological research in the Great Basin: 1964, 259-64. Reno: Desert Research Institute.
- _____. 1980. Washo bipartite verb stems. Klar 1980:85-99.
- Klar, Kathryn, et. al. 1980. American Indian and Indoeuropean Studies: Papers in honor of Madison S. Beeler. The Hague: Mouton.
- Langdon, Margaret. 1990. Morphosyntax and problems of reconstruction in Yuman and Hokan. P. Baldi, Linguistic change and reconstruction methodology, 57-72. NY: Mouton de Gruyter.
- Nichols, Michael. 1974. Northern Paiute historical grammar. Ph.D. dissertation, UC Berkeley.
- Oswalt, Robert L. 1976. Comparative verb morphology of Pomo. M. Langdon and S. Silver, eds., Hokan Studies, pp. 13-28. The Hague: Mouton.
- Pitkin, Harvey. 1984. Wintu grammar. UCPIIL 94.
- Rude, Noel. 1987. Some Klamath-Sahaptian grammatical correspondences. Kansas Working Papers in Linguistics 12:67-83.
- Sapir, Edward. 1912. The Takelma language of Southwestern Oregon. F. Boas, Handbook of American Indian languages, vol. 2, 1-296. (repr. V. Golla, The collected works of Edward Sapir VIII: Takelma texts and grammar. NY: Mouton de Gruyter).
- _____. 1916. Time perspective in aboriginal American culture: A Study in Method. Canada Department of Mines, Geological Survey, Memoir 90, Anthropological Series No. 13. (repr. D.

- Mandelbaum, Selected writings of Edward Sapir. Los Angeles: U. of California Press, 1949).
- _____. 1922. The fundamental elements of Northern Yana. UCPAAE 13:215-34.
- _____. 1929. Central and North American Languages. Encyclopaedia Britannica, 14th ed., vol. 5, 138-141. (repr. W. Bright, Collected works of Edward Sapir, vol. 5, 95-104. NY: Mouton de Gruyter).
- Sherzer, Joel. 1976. An areal-typological study of American Indian languages north of Mexico. Amsterdam: North-Holland.
- Shipley, William. 1963. Maidu texts and dictionary. UCPIIL 33.
- _____. Maidu grammar. UCPIIL 41.
- _____, and Richard A. Smith. 1979. The roles of cognation and diffusion in a theory of Maidu prehistory. J. of California and Great Basin Anthropology: Papers in Linguistics 1:65-73.
- Silverstein, Michael. 1979. Penutian: An assessment. L. Campbell and M. Mithun, eds., The languages of Native America: Historical and comparative assessment, pp. 650-91. Austin: U. of Texas Press.
- Taylor, Walter. 1961. Archaeology and language in Western North America. Am. Antiquity 27:71-81.
- Ultan, Russell. 1967. Konkow grammar. Ph.D. dissertation, UC Berkeley.