SYNTACTIC CHANGE
edited by
Brenda B. Johns
and
David R. Strong

August, 1981
DEPARTMENT OF LINGUISTICS
THE UNIVERSITY OF MICHIGAN
Ann Arbor, Michigan 48109
Hermit Crabs in Uto-Aztecan

Jeffrey Heath

Harvard University
1. General.

It is evident that a recurrent type of historical change is the squashing together of two or more originally separate words into a single word (or similarly closely-knit sequence), usually with one of the original elements now functioning as a grammatical affix, auxilliary, or the like. In Uto-Aztecan historical linguistics (a fast-growing field), a number of instances of this reduction process have been discussed by Langacker and Jacobs, who have emphasized the development of original 'higher' verbs or auxiliary verbs into aspect and voice affixes. Thus, schematically, reconstructed *Verb₁ + Verb₂, with *Verb₂ a higher predicate, becomes attested Verb₁-Verb₂, with the second element now a grammaticalized suffix.

In this paper I wish to reevaluate a number of putative examples of this sort. In section 2 I attempt to refute Langacker's suggestion that some UA passive suffixes reflect former independent copula verbs. In section 3 I deal with Jacobs' interpretation of the evolution of aspectual and thematic (voice-marking) suffixes in the Ogan subgroup; I try to show that although Jacobs is partly correct in asserting that original independent verb roots played a major role in creating the attested forms, the actual processes which produced these forms were much more complicated than Jacobs thought. Specifically, I argue that the attested Verb₁-Verb₂ structure does not derive in a simple manner from an older prototype *Verb₁ + Verb₂, but rather in most of the important cases reflects a blurring between this latter construction and an inherited suffixal construction *Verb₂-X. I try to show that this blurring, by which Verb₁-Verb₂ functionally continues the old *Verb₂-X formation though formally continuing the old *Verb₁ + Verb₂ construction, was facilitated by now which the fortuitous phonological similarity between suffix *-X and *Verb₂ was particularly significant. In section 4 I discuss the implications of this sort of intrusion of phonological factors into morphosyntactic change, and argue against the use of historical derivations to support abstract synchronic derivations of the sort frequently supported by Langacker, Jacobs, and others sympathetic to generative semantics and related approaches.


The UA languages are shown, with some omissions, in Figure 1, which also indicates the abbreviations for language names used here. From 1975 until very recently it was thought that the eight basic subgroups (N₁-N₄ and S₁-S₄, in the figure) were coordinate groups directly descended from PUA without intervening intermediate proto-languages. However, it is only recently that serious historical work on morphophonemics, derivational verbal morphology, pronominal systems, and the like has been carried out. My work on the first two of these areas (Heath 1977, 1978) has now demonstrated that northern and southern intermediate proto-languages (PWUA, SWUA) must be recognized.

Langacker (1976) hints at, but does not overtly endorse, this revision in UA subgrouping; much of his historical data (e.g., the distribution of passive allomorph *-1-li-wa as corrected below, and the distribution of reflexive pronominal prefixes including a morpheme *no-) strongly supports the NUA/SUA genetic bifurcation.

In Chapter 4 of Langacker (1976), it is asserted with considerable confidence that UA had passive variants *-wa- and *-wa-, the latter being more archaic. Moreover, the *-Ti- element was a grammaticalized form of an old copula verb ('to be'), while *-wa/-1-li-wa- was a nominalizer. The symbol *T represents irregular fluctuation between *T and *t (or fortis *-T). The superscript i in *i-wa- indicates i-ablaut that is, under conditions described in Heath (1977) the final vowel of the preceding morpheme becomes a weak, unstressed i-vowel. According to Langacker, in *-Ti-wa- the ablaut was optional, hence on the surface we had variants *-ti-wa-, *-ti-wa-, *-ti-wa-, and *-li-wa-.

However, neither the *T/i alternation nor the optional application of i-ablaut to underlying i-vowels is justified by what we know about comparative UA phonology and morphophonemics. The reason why Langacker had to recognize such alternations despite the fact that the attested languages lack them is that the etymological correlations made were manifestly incorrect.

In response to criticism, Langacker has effectively withdrawn from the putative cognate set So'a passive *-tī- (allegedly from *-tī-wa-) and Ho 1-iti, also a kind of passive. These were the only
NUA passive suffixes included in the original set; the remaining passive suffixes are all from SUA languages and all directly reflect PSUA *-11-ia-. There is no evidence in SUA of *-1/1 or *-1/1 fluctuation in this suffix (or elsewhere). The shorter passive variant, *-1-ia-, is widely attested in both NUA and SUA languages. The only secure reconstruction for FUA is thus *-1-ia-, while the longer form *-11-ia- is restricted to SUA and is thus best interpreted (on distributional and structural grounds) as an extension of older *-1-ia- developed in PSUA. I therefore disagree with Langacker's suggestion that, as a passive morpheme, *-1-ia- developed as a secondary contraction from older *-1/1-ia-. In addition to these SUA passives in *-11-ia-, the other forms which Langacker deduces to support the reconstruction of copula/passive *-t:i- are these: a) a set of verbalizing suffixes added to nouns X to create verbs of becoming or producing ('to become X', 'to make X'); b) participial suffix -ik-; and c) reconstructed independent copula verb *t:i-. As for (a), it is true that some SUA languages have verbalizing suffixes which could go back to forms like *-t:i-, *-ik-, *-iu, etc., and I do not completely rule out the possibility of a connection between one such suffix and the initial morpheme in passive *-11-ia-. However, because the specific forms and meanings do not agree from one language to another, it is probably impossible to reconstruct the shapes and functions of the PSUA verbalizers. Since, contrary to Langacker's views, I do not believe that a *-1/1 fluctuation can be reconstructed for FUA or PSUA, I am not inclined to accept correlations between *-11-ia- and any verbalizers of the shape *-1Y-. Since the vowel of *-11-ia- in *-11-ia- could be the result of i-ablaut from the following *-1-ia- a prototype *-11-ia-, *-ia- with unrounded vowel (Heath 1977) is theoretically acceptable, and if a verbalizing suffix of the same form can be reconstructed there would be the possibility of a connection. However, even so it would by no means follow that the verbalizing sense was earliest and that the intrusion into passive function was secondary.

Moving to (b), Langacker indicates that an active participial *-t:i- is reconstructible for FUA, though he &-t:i-, *-ik-, *-iu, etc., and I do not completely rule out the possibility of a connection between one such suffix and the initial morpheme in passive *-11-ia-. However, because the specific forms and meanings do not agree from one language to another, it is probably impossible to reconstruct the shapes and functions of the PSUA verbalizers. Since, contrary to Langacker's views, I do not believe that a *-1/1 fluctuation can be reconstructed for FUA or PSUA, I am not inclined to accept correlations between *-11-ia- and any verbalizers of the shape *-1Y-. Since the vowel of *-11-ia- in *-11-ia- could be the result of i-ablaut from the following *-1-ia- a prototype *-11-ia-, *-ia- with unrounded vowel (Heath 1977) is theoretically acceptable, and if a verbalizing suffix of the same form can be reconstructed there would be the possibility of a connection. However, even so it would by no means follow that the verbalizing sense was earliest and that the intrusion into passive function was secondary.

As for (c), Langacker mentions the well-known FUA verbal marked *kat: to 'sit' and segments this as *ka-t:i-, where both morphemes are copula verbs (1976:133). The segmentability of *ka- is supported only by the occurrence in one language, Ru, of several copula forms like kaa-tei, yei-kaa, and tee. However, this language is not known for its archaic verbal formations and in any event its derivational structures have not yet been adequately studied. Langacker also mentions yax 'to be' in the Cayan subgroup of the NUA Taktic group, allegedly *yak:ka → yax → yax (another double-copula construction, this one with initial copula *yak-); however, the vocalic change in the final step of the derivation does not fit Cayan comparative phonology and in general the etymology is improbable. Thus although *kat: to sit' is clearly reconstructable for FUA I do not see any reason to identify a component copula morpheme *t:i- here. The other problems with the etymological correlations discussed here, as well as the point (b) just above, is that these forms have *t:ia- *1 in passive *-11-ia-, so that even if Langacker's individual reconstructions are accepted the correlations among them cannot stand up.

Instead of looking outside the verbal derivational system for external sources for *11-ia- in passive *-11-ia-, perhaps it would be better to look for possibilities within that system. As it happens, the solution is probably right inside the system of voice-marking affixes. Although I cannot here undertake a detailed exposition of this matter (see, however, Heath 1977), we can reconstruct the following transiting suffixes in verbal morphology: a) for FUA (i.e., PSUA and SUA) benefactive *-11-ib- for PSUA only, causative *-11-ya-; c) for SUA only, causative *-11-ya-. I omit transitive thematic suffixes such as *-11-ia- and *-11-ia- (Heath 1978) from this list.

Since simple benefactive *-11-ia- occurs both in the north and south it appears to be extremely archaic; causative variant *-11-ya- is found only in the south, as is simple *-11-ya-. Therefore take *-11-ia- as a formal extension of *-11-ya-. Having established that *-11-ia- can occur as an essentially meaningless (redundant) extension in such a form, it is not difficult to imagine that passive *11-ia- could be extended as *-11-ia- in SUA.

If this suggestion is approximately correct, Langacker's correlations (which cut across morphological classes and require positizing various peculiar phonological fluctuations) are unnecessary. Of course, Langacker may still be able to show that benefactive *-11-ia- itself might reflect an old verbalizing suffix that became independent verb. However, his claim has been that passive *-11-ia- is the direct reflection of an original complex syntactic construction involving a copula verb; he has used the historical analysis to provide at least some support for his general claims about the (universal) formal structure of passive constructions. I do not agree that the UA evidence provides any support of this kind.


To begin with, observe the internal subgrouping of the Taktic group, Ru in Figure 1. There is general agreement among specialists that Ca and Cu form a late subgroup (GaCu), which along with Ru constitutes the Cayan subgroup; at the next level Se comes in to
complete the Takic group. Jacobs (1975) deals with the history of the major derivational formations of verbs in the Cucap languages, and I wish to reevaluate his conclusions here.

First, however, the central point can be made in another connection. There is abundant evidence from both NUA and SUA that PUA had a future suffix *-nl. Langacker is aware of this but is troubled by the forms of some SUA future suffixes: "...Yaqui -ne, Mayo -nake, and potential cognates with shifted senses suggest the conceivable alternative that some or all of the forms in question descend at some level from "na'kik 'want'.", (1977a:194).

Actually, Ya -ne directly reflects PUA *-nl. Although the usual developments are *i → Ya i and *i → Ya e, word-final *i in Ya verbs seems to become e rather than i. However, the form -nake in the closely related Mayo language obviously cannot directly reflect *-nl. As Langacker suggests, the form -nake is probably derived from an independent verb meaning 'to want'. However, the function which this form continues is that of the old suffix *-nl, which—and this is crucial—begins with the same consonant as *naki 'to want'. My claim, then, is that what we have here is not a simple grammaticalization of an old complex 'to want' construction; rather it is the result of a more complex morphophenomenal change by which an old suffixal construction (*Verb-nl) is formally renewed by taking a new suffix form modeled on an independent verb root. It may be that in this instance there was an intermediate stage with a compound construction of the type *Verb-naki 'to want to Verb'. However, I will argue that such an intermediate stage is not always necessary in this renewal process. On another matter, I certainly will not deny that the semantic association 'to want/future' plays an important role in this analogical interaction. However, as the other examples I have described below indicate, so long as there is a phonological similarity (especially, the sharing of an initial consonant), the semantic link between the original verb and the new grammaticalized meaning may be quite weak.

The term hermit-crab restructuring is suggested as a technical term for this sort of morphophenomenal change, viz., the change by which an inherited affix (perhaps threatened with extinction brought about by the loss of its phonological attirion) prolongs its existence by being the phonological shell of an independently occurring stem or particle which bears a coincidental phonological resemblance of some sort to it. I must stress, however, that there are significant differences in the precise historical dynamics at work in the various instances mentioned here. For this reason I have some misgivings about this addition to our already overloaded catalogue of terms for types of analogical restructurings. Such a catalogue undoubtedly has heuristic value, but it should be clearly understood that application of a label to a historical change is a far cry from an adequate structural (let alone sociolinguistic) analysis. In principle, complete analysis rather than categorical labeling must remain the goal of any serious work in historical linguistics.

Jacobs (1975) deals summarily with a number of clear examples of grammaticalization, such as the development of centripetal derivational suffixes from old verbs of motion; I have no quarrel with these cases. The bulk of Jacobs' work, however, is devoted to the more problematic cases of the Cucap aspirantal suffixes and thematic (voice-marking) suffixes, which he also derives from old independent verbs. I begin with the thematic suffixes; I show that the two Proto-Cucap suffixes in question, mediopassive *-ax- and causative *-in-, are simple reflexes of old PUA suffixes, although *-ax- subsequently became partly confused with an independent verb *yax- in one language (Cu).

In Heath (1978) I have presented evidence that PUA, FMUA, and FMUA had a special system of intrasitive and transitive thematic suffixes for a set of verb roots which I refer to as the *na- Class. For FMUA, the major thematic suffixes were mediopassive *-k- (Ho *-k/-kk-, Se *-q-, etc.) and causative *-na- (Ho *-na-, Se *-na-, SuPa *-na-, etc.). In addition to these and other thematic suffixes, each theme was characterized by a particular stem-shape (simple *GCV-, hardened *CV'-CV- for punctual aspect, one of the reduplicated patterns). The overall *na- Class system was sharply distinct from that of other verbs, which lacked these thematic suffixes and some of these morphophonemic processes.

Proto-Cucap mediopassive *-ax- and causative *-in-, found with 'thematic' verbs, are the direct continuation of this thematic system. FMUA *-k- was regularly converted into *-ax- by intervocalic lenition of *k, final-vowel syncope, and shifting of morpheme boundary (*GCVa-k- reconstrued as *GCV-ax- after word-final simplex *GCVa became *GCV). The choice of *-ax- as the vocalism in *-ax- reflected the fact that this was the most common stem-final vowel in FMUA. Because causative *-na- induced i-ablaut, the FMUA forms were of the type *GCV-n-a, and this regularly became Proto-Cucap *GCV-in- by the same processes seen in the case of *-ax-.

Jacobs was aware of the possibility that *-in- could be related to FMUA *-na-, but was unaware of FMUA *-k- as a possible source for *-ax-. Instead, he suggested that *-ax- was a reflex of the verb yax-, which occurs in the Cucap languages in the sense 'to say' and also (with another verb) as a kind of auxiliary verb. Indeed, suffix *-ax- and the verb yax- have become hopelessly confused in Cu, and in this light Jacobs' position is quite understandable; alas, it is incorrect. The forms *-ax- and yax- are not divergent reflexes of a single proto-form; rather, they are etymologically unrelated elements which became associated secondarily (due to phonological similarity). In Cu, under certain conditions *-ax- has been formally renewed as *yax- (which is the form yax- would take as an unattested suffix), and to this extent we have a hermit-crab restructuring. A distinct type of development has occurred in Lu, where *yax- has supplied some innovative past tense forms for thematic verbs (mediopassive and causative); this is not a hermit-crab restructuring.
In Ga the thematic class (the old *na-Class) is relatively unproductive and only about seven roots still take the two thematic suffixes, mediopassive *-i- and causative *-i-. The latter is obviously a reflex of Proto-Cupan *-in- and PUNA *-na-, while the former is etymologically obscure (I attempt below to account for it as an indirect reflex of *-ar-). There is also an independent root *ya-* 'to say, to do thus', and this can also be used in an auxiliary construction which conveys a punctual, restrictive, or intermittent note. Thus alongside a regular (nonthematic) verb form like pi-teew-?1 'He saw it' ('it-see-Past'), we have an auxiliary form teew pi-ya-ya-ya-71 'He glanced at it'. Note that here the nuclear verb teew occurs in free, uninflated form while the auxiliary carries the affixes (Jacobs 1975:47-48; Geiler 1977:223-227). Cu and Lu also have constructions of this type (Jacobs 1975:94, 96).

In Cu the thematic verb class is far more productive. The basic endings are mediopassive -(y)x- and causative -(x)-. The final consonant (x, n) is deleted before the important series of inflectional suffixes begins with q. The y in -(y)x- appears except when the morpheme is preceded by a coronal consonant (c, l, etc.), hence c4a-ya-ya-ya-ya- 'to lean' but c4a-ya-ya-ya-ya- 'to shine' (J. Hill 1966:233-234).

Note that it is quite possible to take *(y)x- as the underlying form and posit a conditional y-deletion rule to account for the shorter surface allomorph. In the past tense, pronoun affixes (which often, unlike roots, end in vowels) are infixed between the root and the thematic suffix, hence w44-ya-ya-ya-ya- 'It was stuck in the ground' (J. Hill 1966:211) with 3yg- -pe-). By contrast, nonthematic verbs take the past tense pronoun as a prefix: p44-ya-ya-ya-ya- 'They were there' (with 3pl pm- and root-qal) (lom. q1.1)

It is not difficult to see how Jacobs' historical analysis follows from these facts. Essentially, he takes the auxiliary construction seen in Ga teew pi-ya-ya-71 'He glanced at it' as historically primary, and regards the Cu mediopassive thematic forms with -(y)x- as a reduced, grammaticalized reflex thereof. In his words, "the -(y)x-...started off as an independent inflected copula verb, gradually became incorporated into the lower verb, and eventually became the 'thematic' suffix -(y)x-..." (1975:128).

Jacobs does not fail to note that such a historical analysis provides aural support, even though indirectly, to the generative-semantics model which he, Langacker, and others were applying to the Cupan languages (as well as English, etc.); in this model (cf. Langacker 1975) abstract and active higher verbs (SO and DO) are posited in underlying structures. To complete his analysis of Cupan, Jacobs then has to show that the causative suffix -in- was also a grammaticalized independent verb; though noting the overwhelming evidence for the reconstruction of PUNA causative *-na- he nonetheless finally chooses to derive Proto-Cupan *-in- from Proto-Cupan (but not PUNA or PUNA) *tain- 'to do, to behave, to happen' (1975:139, 159ff.)

Even if we disregard the phonological difficulties in deriving -(y)x- from *tain, the structural and semantic difficulties in this analysis make it quite unattractive. We already have a perfect phonological, structural, distributional, and functional match with cognates in many other UA languages (including closely related ones like Se) pointing to PUNA *-na- as a causative thematic suffix, and this is the only credible etymology for Proto-Cupan *-in-.

There is, however, a grain of truth to Jacobs' suggestion that thematic *(y)x- derives from the verb *ya- in the latter's auxiliary functions. I would modify this as follows: in Cu there has been a sort of blending together of constructions involving two originally unrelated morphemes, mediopassive *-ax- (PUNA *-sk-) and auxiliary **-ya-. The former occurred only after consonants, the latter always (or at least chiefly) after vowels or word-boundary. There is clear evidence that the auxiliary uses of **-ya- occurred primarily in past tense forms; we will see below that *ya- provides some thematic past tense forms for Lu, and some apparent past tense thematicizations of normally nonthematic verbs in Cu (Jacob 1975:160) seem to be vestiges of old auxiliary forms with **-ya- (although causative -(x)- appears to have replaced **-ya- in the attested forms (a natural analogy since the nonthematic verbs in question are transitive, while **-ya- has now become an allomorph of the mediopassive ending in this language).

Omitting pronominal object-markers, we thus have two basic verb types for mediopassive thematic verbs in Cu: a) the nonpast type ROOT-ax-SUFFIX, and b) the past type ROOT-BO-AX-SUFFIX. Assuming that -(y)x- and **-ya- are now the same morpheme, the only structural difference (aside from distinct tense suffixes) is the presence/absence of a thematic subject-marking just after the root. The past tense type (b) directly reflects the old auxiliary construction, which originally meant 'to (verb) a little' but is now a general past tense form. It is quite easy to understand that the mediopassive suffix in the nonpast type (a), which reflects Proto-Cupan *-ay- and thus ought to have shown up as simple -ax- after all roots, has been enlarged as *ya- except after coronal consonants. It is possible that there was a slightly earlier past stage in which even coronal consomates were followed by the full form -ya- and that the recent y-deletion process has occurred: alternatively, it could be that the -ya- never has occurred after coronals.

Let us briefly return to Ga, which is very close to Cu genetically. In Ga the auxiliary construction with *ya- is productive, apparently occurs with all types of verbs (mediopassive and causative, thematic and nonthematic), and is not restricted to past tense although a statistical survey of textual occurrences might show a predominance of past tense forms. The most difficult question to answer is whether this *ya- is in any way related to the etymologically obscure mediopassive thematic suffix -in-(opposed to causative -(x)-). This mediopassive suffix occurs in a structural environment where we would
reflect original suffixes *-kí- and *-i-na- with essentially the same functions as seen in the modern reflexes; these forms originally had nothing to do with independently occurring verb roots. A Proto-Cupan auxiliary construction involving *-yax- 'to do thus' did become associated with the past tense, and became grammaticalised in Cu and Lu (in different ways); in Lu this evolved into a past punctual suffix for thematic verbs, while in Cu it came to be identified with the phonologically similar mediopassive thematic suffix *-ar-, whereupon *-yax- was restricted to mediopassive environments and lost its status as a tense marker (the presence of an infixed pronoun is now the past tense marker). Unfortunately, the generative semantics system (as methodologically unconstrained as it is) does not posit an abstract equation between 'to do thus' and past tense.

We now consider the other set of alleged grammaticalisations of independent verbs which Jacobs has discussed—a set of aspectual or tense-aspect suffixes typically found in the rightmost morpheme slot in the verb. Simply put, Jacobs' claim is that these suffixes derive from originally independent stative verbs meaning 'to sit' or the like, and that these are further examples of the gradual incorporation process which he has suggested for the thematic suffixes discussed above. As in the case of the thematic suffixes, at first sight his argument looks unsalvageable, but closer inspection results in the rejection of or at least qualification of most of his proposed analyses.

In Table 1 I present a) Proto-Cupan (or Proto-GaDu) verbal suffixes, chiefly with aspectual and temporal meaning; b) independent verb roots; and c) reconstructed original suffixes. Basically, Jacobs argues that the attested suffixes derived from the forms in (a) ultimately represent the gradual compression of earlier constructions involving the independent (higher) verbs in (b); I argue, on the other hand, that the historical processes were more complicated and crucially involved the original suffixes in (c) as well as the verb roots in (b).

TABLE 1

<table>
<thead>
<tr>
<th>a. new suffix</th>
<th>b. verb root</th>
<th>c. old suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>*-gal nonfuture</td>
<td>*gal- 'to sit'</td>
<td>*-ga- agentic</td>
</tr>
<tr>
<td>durative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*-wín durative plural</td>
<td>*wín- 'to be lying down'</td>
<td>*-i-wa- passive</td>
</tr>
<tr>
<td>*-nac future</td>
<td>*nac- 'to sit'</td>
<td></td>
</tr>
<tr>
<td>durative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*-ní future</td>
<td>*ní- 'to go around'</td>
<td></td>
</tr>
</tbody>
</table>

Basically, then, I argue that the phonological similarities (perhaps along with common semantic features) resulted in the formal renewal of the old suffix by which it took on the phonological shape

expect a reflex of Proto-Cupan *-ax-, which is seen not only in Cu *(y)ax- but also in Lu *-ax-. There is a possibility (but only a possibility) that Ca *-l- actually is derived from *-ax-, via the following developments: a) extended as *-yax- by analogy to auxiliary -yax-, such as in Cu; b) reduced to *-y- by phonological loss of */y/ initially before suffixes beginning in *q, then generalised to all environments; c) reduced to *-i- in unstressed syllable. I have doubts about all three of these proposed changes—(a) because Cu does not show some of the structural conditions (notably the restriction of auxiliary *-yax- to past tense) which in Cu facilitated the analogy, (b) and (c) because adequate supporting evidence is not available. There are other conceivable sources for Ca mediopassive *-l- (assimilation of boundaries, grammaticalisation of epenthetic vowel, etc.), but I have no entirely satisfactory concrete suggestions.

In Lu, the auxiliary forms with *-yax- became restricted to constructions involving thematic roots (whether causative or mediopassive). As in Cu, they were also restricted to the past tense, and in Lu (unlike Cu) they also retained their basically punctual nuance. Thematic roots now have a past indicative with suffix *uk added to the thematic ending (mediopassive *-ax-, causative *-l-), hence *ax-uk (normally contracted to *-wuk) and *-i-k. The corresponding past punctual is formed by adding -(y)ax in place of mediopassive *-ax- and -(y)ax or -(y)ax instead of causative -(y)ax. (The relatively unproductive nonthematic classes also have past indicative *uk, but usually have suffixless reduplicated past punctual forms.)

Despite some phonological difficulties it appears that all of the thematic past punctual allomorphs go back to *-yax-. The differences between the mediopassive forms (which usually lack the *y, and if not begin with a global syllable) are obscure but are probably recent specializations motivated by the necessity of distinguishing these voice categories. In contrast to the Cu type ROOT-PRONOUN-yax-SUFFIX, the Lu structure is simply *ROOT-yax without a pronominal affix or an inflectional suffix; this raises the possibility that the direct prototype for the Lu thematic past tense forms was a construction with uninflected *yax in contrast to Cu forms which reflect an inflected auxiliary *-yax-.

The important point is that in Lu there has been no actual blurring between mediopassive *-ax- and the various past punctual allomorphs derived from *yax. The latter, with the phonological specialisations mentioned above, are used for causative as well as mediopassive forms.

In view of these considerations, I cannot agree with Jacobs' contention that the Cupan thematic voice-marking suffixes have resulted from the gradual incorporation or grammaticalisation of original higher verbs analogous to the abstract EE and DD postulates postulated by Langacker (1973) and others for English (and universal) grammar. Proto-Cupan mediopassive *-ax- and causative *-l- directly...
of the verb root; this created the new suffix in (a). However, as can be seen by contrasting the grammatical labels in (a) with those in (c), there has been much more than a simple phonological renewal. Indeed, the functions of the new suffixes have actually been produced by a very complex series of developments postdating the initial process of formal renewal (by a hemit-crab restructuring), and to justify our analytical position it is necessary to study each case in detail.

The case which is most recalcitrant to my position, and most favorable to Jacobs', is *-gáI. Jacobs' position is that there was initially a complex construction roughly of the sort 'sit thinking', where 'to sit' came to be diluted as a higher predicate with purely aspectual (durative) meaning and eventually became phonologically reduced as a suffix to the nuclear verb, though the 'precise formulation' of these processes remains problematic and requires 'more detailed investigation' (1975:186-200).

Now it is perfectly possible for a verb of the type 'to sit' to gradually become a durative affix, particularly if an intermediate compound construction 'think-sit' involving a range of nuclear verbs (here 'think') is posited. However, in the Cuanan case I am inclined to posit a more complicated picture. As far as the sequence of events is concerned, I would make the following suggestions: a) whereas Jacobs argues for an original purely aspectual value for *-gáI, with the attested temporal values considered a late accretion, I think that temporal restrictions played an important role through much of the historical sequence; b) whereas Jacobs concentrates on the development of *-gái as a basic inflectional ending for main verbs, I am inclined to regard its other functions in various subordinated constructions as historically pivotal.

As regular inflectional endings, the basic forms are these:

<table>
<thead>
<tr>
<th>a. Lu</th>
<th>b. Ca</th>
<th>c. Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>q-</td>
<td>*gái</td>
<td>*gái</td>
</tr>
</tbody>
</table>

| q- | *gái present singular & | *gái past singular & |
| q- | *gái present singular & | *gái past singular & |


Pursuing this, I suggest that Proto-CaCú (which had diverged from Lu) subsequently underwent the creation of a new past durative based on *-gáI (contrasting with a past anticausal lacking *-gái). It is possible that the phonological similarity between *-gái and the inherited past usitative suffix preserved in Lu -uk (allomorph *-k after vowels), perhaps *-k in Proto-CuGan, facilitated this extension; in this event we would have to recognize a sinoc instance of hemit-crab restructuring (*-k formally renewed as *-gái).

Recall that the first consonant of the old suffix was often crucial in establishing this "phonological similarity" (and we will see several additional examples of this below). However, this point is not clear in this instance, since the present tense is inherently durative (as well as temporally unmarked in a sense), so it is not surprising that present *-gái would be used as the basis for an innovative past durative form.

Jacobs may well be correct in arguing that the Ca and Cu forms reflect Proto-CaCú present singular *gái and past durative singular *gái-71. The -71 suffix occurs without *-gái in Ca -71, a sort of punctual or perfective past tense ending; the addition of *-71 to *gái was necessary in order to distinguish the present singular from the new past durative singular. The final *-l of present singular *gái tends to be lost in some Ca dialects, while in Cu the loss of *-l is complete and it has accordingly been possible to reduce *gái-71 to -gái without confusing the present form -gái with it. The same type of reduction, incidentally, has occurred in Lu, where present singular *gái has lost its *-l, and except in its uncommon stressed form *gái it has also lost its original vowel and become just *-q. See Jacobs (1975, Chapter VII).

Note that in the analysis proposed here *-gái began as a tense morpheme (past), though inherently implying an aspectual value (basically, durative). This is also its current status in Lu, while in Ca and Cu it has elaborated its aspectual value by extending into the past durative. There is still, however, a residual temporal restriction in that *-gái does not occur in future tense forms (see below).

The remaining question is just how *-gái became a present tense suffix in Proto-CuGan to start with. Although I cannot rule out the possibility that this form was a direct reflex of an older construction involving *gái - 'to sit' as independent root and then as a compounding final, I feel that there was probably more to it than this and that *-gái was first grammaticalized not in the system of inflectional (tense-aspect) suffixes but rather in the system of subordinating suffixes.

There is substantial evidence favoring the reconstruction of a suffix *-ka- (or *-gái) as the FNUA agentic nominalizer. No, whose entire system of participal endings can be shown to be highly archaic, has *-ka- in this function, and reflexes of this suffix also occur in various gerundial forms. In Tu and the Num group, as an agentic *-ka- has been ousted by various innovative suffixes,
though in Umic the suffix survives in some gerundial functions. Reflexes of *-kaₕₜ as agentive suffix occur in some Umic languages, and when this is added to the other evidence we must conclude that PUA had such a form in agentive and probably also in gerundial function. The chief formal difference between these two occurrences of the suffix was presumably that the regular nominal absolutive (i.e., free unpossessed) suffix -t (hence *-kaₕₜ) was regular in agentive but not gerundial function.

The regular reflex of this in Proto-Cupan would be agentive *-qaₜ and gerundial *-qaₕₜ, with possible variants like *-aq depending on syllactic conditions. Because *k and *q have apparently been only marginally distinct in NUA languages there is some possibility that the consonant was *k rather than *q, or that the distinction was neutralised in some occurrences of the suffix; I will basically disregard this problem here.

In Lu, agentive *-qaₜ retains its basic agentive function. However, instead of gerundial *-qa there is a dative subordinate *-gal which becomes *-galₕ when a pronominal prefix is present (the *a is obscure etymologically but is typologically parallel to various 'possessed-state' suffixes in Lu and other NUA languages). For a synchronic analysis of the functions of these forms in Lu see Jacobs (1975:93-94) and Kroeber and Good (1965:146-147). My suggestion is that this use of *-galₕ is archaic within Cupan (though it does not date from PUA or Proto-Tahiti times), and that it represents the initial intrusion of *-gal into the suffixal system. On distributional grounds it seems likely that *-gal replaced the simple (gerundial) form instead of agentive *-qaₜ. Note that the replacement of *-qa by *-gal involves phonological (as well as semantic) similarity.

If at this early stage, then, we had agentive *-qaₜ and gerundial *-gal. Subsequently, but still prior to Proto-Cupan, a form *-galₕ-developed, taking over some of the functions of *-qaₜ (though the latter still survived in the more 'nouny' agentive formations). Formally, this *-galₕ is a hybrid constructed by adding absolutive -t (seen in agentive *-qaₜ). The *k vowel could conceivably go back to the time when *-galₕ-'to sit' was *galkₕ (cf. PUA and PUA reconstitution *-kₕₜ), but more likely the *k is an archaistic vowel needed to break up the unacceptable word-final cluster *tₜ.

This *-galₕ becomes Caₕₜ-*galₕ and Cuₕₜ-*galₕ (Jacobs 1976:46-47; Seller 1977:268-269) by regular phonological developments. In Lu there is no regular reflex, but two indirect reflexes. The expected plural counterpart for *-galₕ is *-wunₕₜ, which shows up in *-wunₜₕ. In Lu, *-wunₕₜ has regularly become -wumₜₚ, but is now semantically a singular (!) gerundial ending, and is pluralised (*-wumₜₚₜₚₜₚ) by adding the regular nominal plural suffix -(u)n. Unlike most forms involving a singular/plural opposition *-galₕ/-*wunₕₜ, this construction is formally nominal, so the plural suffix -(u)n is available to keep number straight; hence the stem-suppletion was unnecessary and one of the stems (*-wunₕₜ) generalised, ousted *-galₕ. Nevertheless, on structural grounds an earlier *-galₕ can be posited for Proto-Lu, hence for Proto-Cupan.

The other possible indirect reflex of *-galₕₜ in Lu is the contemporaneous gerundial *-qaₕₜ. Synchronically, this consists of present tense suffix -qaₕₜ plus the common gerundial -nyaₜ, which would reflect *-qaₕₜ specifies antecedent gerundial sense. Hence VEHₜ *-nyaₜ 'having VEHₜ' but VEHₜ-*qaₕₜ-nyaₜ 'while VEHₜing'. Although *-nyaₜ as antecedent gerundial has cognates in Du, Ca, and even Se, the combination *-qaₕₜ-nyaₜ is unique to Lu. I consider it to be a reconstructed form of what would otherwise have become *-galₚ-nyaₜ, namely Proto-Cupan *-galₕₜ. Phonologically, this involved the replacement of a lateral sonant by a homorganic nasal sonant, and a syllable-final voiceless dental stop by a syllable-final voiceless velar stop. Structurally, this meant the replacement of a relatively anomalous form (the absolutive does not elsewhere appear as -uₜ) by a structurally regular combination of two elements already attested in appropriate functions.

I suggest that, in addition to *-galₕₜ, the gerundial *-gal also spread from the subdividing system into the regular inflectional system of main-clause verbs, becoming the present tense singular suffix *-galₕ of Proto-Cupan. Since the previous present ending was most likely *-tₜ, this shift was not mediated by a phonological similarity as so many of the other shifts studied here were. It may be that some structural (or diffusional?) pressure favoring the creation of a nonce present tense ending went into operation, and simply took over an existing subdividing suffix with durative aspectual value (especially if used as a contemporaneous subordinate). Or perhaps Jacobs is right and I am wrong, and the development of present-tense *-gal involved direct appropriation of the independent verb *-galtₜ (or *-galtₜ) as a compounding final. I am unaware of any decisive evidence either way, but I do lean to present evidence showing that subdividing suffixes have tended to expand their functional ranges and have sometimes intruded into the regular inflectional system of Cupan languages.

Firstly, a series of formerly rather 'nouny' participial endings including punctual mediopassive *-kıntı and product-of-action or place nominaliser *-pₜ have become high-frequency suffixes with various gerundial functions in Cupan (Proto-Cupan *-kıntı-ₜₜ and *-pₜ-ₜₜ with absolutive ending); some of these functions verge on main-clause inflectional uses. I hope to study these suffixes in a separate article.

Even closer to home, the Cupan languages generally show an 'inceptive' or 'going-to' form with a suffix *-katₜ sometimes preceded by an *-augment (Ca *-kaₜ or *-kₜ, Cu *-katₜ in future durative inceptive *-nakₜ, Lu plural inceptive -kt₈ₜ or -kt₉ₜ). The Ca form has plural variants like *-kat-em and -ikt-em, and these (like the Lu form) show the formally plural nominal ending *-im which is not normally used in (functionally) verbal formations. Although the *k (rather than *q) quality found in most of these forms, as well as the *-im, appears to precede a connection with agentive *-katₜ, I feel that these two are divergent reflexes of the same etymology. I suggest that both the *k-quality and the *-im reflect contra-
nalization of *-ra- by the nominal case ending, usually allative in sense, which shows up as Lu -ik or -yuk, Ca -ka or -ika, etc. Hence I see no real difficulty in deriving the attested inceptive forms from old agentsive, with some assistance from the allative case and, in addition to providing yet another example of formal and functional interaction triggered in part by fortuitous phonological resemblance, this digression has demonstrated that the road leading from the subordinating system to the main intransitive suffix system has been traveled before, thus lending some credence to my suggestion that Proto-Cupan present singular *-gal may have started out as a subordinator.

Let us now move on to a discussion of apparent cases of the grammaticalization of *-win- as a suffix. As it happens, there are two distinct functions which the suffix *-win has in Cupan languages. First, most subordinating and intransitive suffixes derived from *-cal are specifically singular, and take corresponding plural forms based on *-win. Alongside Table 2 (above) we could thus construct a supplementary table with the various plural forms: Lu -win present plural; Ca *-w(en) present plural and -*en- past durative plural; Cu -win present plural and -*en- past durative plural. In some of the subordinating forms, as we have already seen, one or the other of the two roots may generalize, so the parallelism is not perfect, but we will not go into these details here.

There is, however, one highly important case where the reflexes of *-win occur (for both singular and plural number) to the exclusion of *-cal. Particularly in Cu, the forms derived from *-win have, in addition to their functions as plural caseparticiple-like *-gal, special passive or resultative functions for singular or plural number; there are also some examples of this in Lu and Ca (Jacobs 1975:186-187; J. Hill 1966:78-79). Synchronically, then, we have a rather awkward ambivalence between plural-subject and passive meaning; it must be emphasized that the passive here is not parallel to the Spanish type 'he is killed' (i.e., 'he has been killed'), since in the Cupan examples there are no third person plural pronominal elements in the passive sentence.

As an independent root, reflexes of Proto-Cupan *-win- (e.g., Ca *wen-) occur in senses such as 'to be lying down' or 'to be (in a certain location)'. There is no clear semantic difference between this root and *gal- 'to sit', except that *-win- is used primarily with inanimate or plural subject while *gal- prefers animate or singular subject. If the singular/plural opposition is focused on the animate/inanimate one put to the side, it is not difficult to see how the various grammaticalized suffixes derived from *-win- could develop corresponding plural forms based on *-win. The basic formula is this: sg. *gal- : pl. *win- :; sg. *-gal- : x. Obviously, x = *-win.

Thus, this does not explain the passive (imperative) uses of *-win. Recall from Table 1 and the earlier discussion that PUA and both intermediate proto-languages (PNA and PNGA) had a passive suffix *-ma- (for PNGA cf. Tu *ma- and Ho *-ta). We do not find direct reflexes of this in Cupan, nor in Se (which with Cupan forms the Takic group). Se, like Cupan, has a kind of passive or resultative with suffix *-in in a few combinations (K. Hill 1967:213). It appears, then, that *-win has replaced older *-ma- as the basic passive ending in these languages. Since both begin with *-m, I strongly suspect that we have another homit-crab restructuring here, by which the shorter inherited suffix was enlarged by taking on the shape of the longer verb root. Since the forms to which passive *-win in Takic languages are added are not (medio-)passive participle or the like, rather the bare verb root, I see no reason to think that these *-win passives were directly derived by the gradual grammaticalization of old, complex passive constructions with *-win- as copula.

Since Se shows passive *-in, but has not shared with Cupan the development of singular/plural tense-aspect endings from *-gal and *-win, I assume that the approximate sequence of events was as follows:

1. By Proto-Takic, passive *-le-* was replaced by *-win.
2. After Proto-Takic but before Proto-Cupan, the development of *-gal as an intransitive suffix, combined with the singular/plural opposition *-gal-*wen- in independent verbs led to the analogical creation of plural forms for *-gal suffixes based on *-win.

I believe that this proposal satisfactorily accounts for the otherwise somewhat mysterious distribution and functions of *-win in these languages. The uncomfortable ambivalence between passive and plural functions of *-win is still tolerated in Cu, while in Ca and Lu most of the passive functions of *-win have been lost.

Let us now examine the future suffixes attested in the Cupan languages, omitting inceptives, imperatives, and potential or irrealis forms:

<table>
<thead>
<tr>
<th></th>
<th>a. Lu</th>
<th>b. Ca</th>
<th>c. Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>an-, -o future</td>
<td>*-ma (future or past)</td>
<td>*-ma (future or past)</td>
<td>*-ma (future or past)</td>
</tr>
<tr>
<td>*-ne(m) future</td>
<td>*-ne(m) future</td>
<td>*-ne(m) future</td>
<td></td>
</tr>
<tr>
<td>punctual (\text{punctual} )</td>
<td>punctual</td>
<td>punctual</td>
<td></td>
</tr>
<tr>
<td>*-nen(ne)(m) future</td>
<td>*-nen(ne)(m) future</td>
<td>*-nen(ne)(m) future</td>
<td></td>
</tr>
<tr>
<td>durative singular</td>
<td>durative singular</td>
<td>durative singular</td>
<td></td>
</tr>
<tr>
<td>*-nen-ne(m) future</td>
<td>*-nen-ne(m) future</td>
<td>*-nen-ne(m) future</td>
<td></td>
</tr>
<tr>
<td>durative plural</td>
<td>durative plural</td>
<td>durative plural</td>
<td></td>
</tr>
</tbody>
</table>

In PNGA we can reconstruct future *-ni and future-declarative *-ba-?li. Se *-ba derived from the latter, but the Cupan forms in Table 3 ultimately reflect *-ni. The historical changes, which have obviously occurred primarily in the CaCu subgroup, are the results of basically two sets of factors: a) the replacement of *-ni by forms derived from the independent verb roots *-ma- 'to sit' and *-ma- 'to go around'; and b) analogical structural pressures emanating from the present and past tense forms.
Lu -(a)n could derive directly from PNA -*nál by the same type of process which has converted mediopassive thematic *-ńk- into lu -*nak- (cf. above). However, -(a)n could also reflect a Proto-Cupan prototype *-ńk- seen in Ca -*ne(a) and in the second part of Cu -*wem- ((passport) -*wem-ńk). The choice between *-ńl and *-ńk(a) as the immediate prototype for -(a)n is probably undecidable, though I incline toward -*ńk(a). In any event, since this *-ńk(a) represents a Cupan hermit-crab restructuring of older *-ńl, the latter is the ultimate source.

It is likely, then, that Proto-Cupan had a future ending -*ńl. The loss of the final *n (optional in Ca, obligatory in Cu and Lu) and the loss in Lu of the vowel *i are parallel to reductions processes we have seen earlier (e.g., *qal becoming Ca -*qa or -*qal, Cu -*qa, and Lu -*q or stressed -*qä). The form -*ńl was taken from the independent verb root *ńl- ‘to go around’, which is preserved at least in Ca; note that the semantic affinity between ‘to go around’ and future tense is weak, but that *ńl- and *-ńk(l) begin with the same consonant. By applying the notion of hermit-crab restructuring, we can avoid some of the puzzles expressed by Jacobs in discussing this cognate set (1975:196).

It remains to account for the additional developments in Ca and Cu. As we have seen in discussing the present and past forms earlier, in these languages a new durative/punctual opposition became established in the past tense, with the present tense automatically durative. The productivity of this aspectual system was sufficient to induce the future tense system to create a similar aspectual opposition where none had occurred before. Moreover, the durative had to be formally marked since this was the case in the past tense, where durative *-qal (sg.) or *-qal (pl.) contrasted with punctual *-qä. Finally, because the past (and present) aspect were formally related to stative verbs (‘to sit’, etc.), there was a structural pressure favoring the use of another stative verb in future durative function.

To fulfill these requirements the verb *nac- ‘to sit’ (preserved in Ca and Cu) was pressed into service, becoming the future durative suffix *-nac. Note again that there is no particular semantic affinity between ‘to sit’ and future durative, but that there was a phonological affinity between *nac- and the existing future suffix, whether the latter was still *-ńl or had become *-ńk(a) by this time. I argue, then, that the combination of this phonological link and the structural pressures just enumerated was sufficient to induce the partial replacement of the old future by the new suffix *-nac, creating a durative/punctual opposition in the future tense.

However, additional readjustments were necessary. To begin with, the structural parallelism between the future and nonfuture systems was not yet complete, since the nonfuture durative *-ńac had no singular/plural opposition seen in past durative *-qal (sg.) vs. *-wem-ńk (pl.). Accordingly, in both Ca and Cu the suffix *-wem-ńk (unlike *-qal) has intruded into the future system to constitute a specifically plural counterpart for future durative (singular) *-nac.

However, in order to distinguish between future durative plural *-wem-ńk and nonfuture durative plural *-wem-, the former has been enlarged as *-wem-ńk(a) (Ca -*wem-ńe or -*wem-ńe, Cu -*wem-) by adding the future suffix *-ńk(a), which by itself now functions as the future punctual ending.

The second problem was that at the time when future punctual *-ńk(a) was opposed to future durative *-nac there was no clearcut formal markedness asymmetry as seen in the past tense, where punctual *-qä was opposed to nonzero durative suffixes. A similar markedness asymmetry was constituted in the future system in either of two ways. One, adopted by Ca, was to enlarge future durative singular *-nac as *-nac-ńk(a). Here the *-ńk(a) was entirely redundant, but is structurally motivated by the analogy to future durative plural *-wem-ńk(a), where the *-ńk(a) was nonredundant, and also by the markedness asymmetry pattern. The alternative, adopted by Cu, was to delete *-ńk(a) in its future punctual sense—in other words, to replace this suffix future durative formation by the old past punctual with *-qä suffix. No ambiguity between past and future results, since the past tense takes a pronominal subject-marker, prefixed to nonthetic verbs and infixed between root and thematic suffix for thematic verbs (recall our earlier discussion of the blurring between mediopassive *-x- and the auxiliary *xam- in Cu).

It seems to me that by recognizing the complex interplay between functional (disambiguating), structural (parallelism-inducing), and phonological (blending) factors we can describe and motivate each step in the development of these future forms (Table 3). No analysis neglecting even one of these factors can account for the data.

We may briefly mention a few other forms related to these future endings. In addition to the various future forms ending in -*ńk(a), Ca has an exhortative -*na/-an. It is likely that the latter is a specialized truncated form of -*nac, which survives in Ca future durative singular -*na(-ne) (Cu has a similar orective oritative suffix -*na which may go back to -*ńk(a), and indeed its plural form (-*wem-) is identical to the future durative plural (Table 3), cf. J. Hill (1974) and Jacobs (1975:190); it is also possible, as Jacobs indicates, that -*ne is a truncated form of -*nac and thus directly comparable to Ca exhortative -*na/-an. In this light we cannot exclude the possibility that Lu future -(a)n directly reflects *-nac instead of *-ńk(a), though I find this unlikely. Lu future durative *-maan (not shown in Table 3) is apparently from *-max-an, reflecting a stative verb *max- ‘to live (in a place)’ found generally in future contexts in Ca and Cu, plus future -*an (Jacobs 1975:190-190). This may be, as Jacobs asserts, a genuine case of relatively straightforward “gradual incorporation.”
4. Conclusion.

In a famous paper on poetic language (in which, inter alia, the disappearance of "bilingual linguists" who neglected the functional analysis of various levels of language was prematurely announced), Jakobson pointed out how phonological similarities are exploited in the works of many poets (e.g., Poe) and how these irregular correlations multiply and modify the range of semantic interpretations (1950). Although Jakobson indicated that the boundary between poetic and nonpoetic language was fuzzy, and that metrical or alliterative effects creep into nonpoetic language, the evidence presented in the present paper suggests that a more far-reaching web of phonological associations is present in languages. Note that most of the cases we have considered here involve actual reshaping of morphemes caused chiefly by such phonologically-based associations (culminating in morphemic equivalence). There must be many other cases where the association does not lead to such reshaping, so that it remains covert (at least to the linguist). But where do we draw the line between such cases of secondary association and cases of "allophonic" specialization of two or more variants of a single morpheme? We need to think these issues out seriously, reevaluating morphosyntax in the light of phonology, and phonology in the light of morphosyntax and semantics. Historical linguists, moreover, need to go beyond the observation that the chance convergence of two structures can lead to syntactic reanalysis (e.g., Hamp 1976; Jakobson 1976), although approaches based on this notion are far superior to insipid generative or typological approaches. It is important to recognize that even an incomplete convergence (hence an association rather than complete phonological equivalence) can trigger a restructuring.

The theoretical position for which I have reserved my strongest criticism is the one which argues that the development of tightly-knit "grammaticalized" morphological complexes from earlier complex syntactic configurations is typically a simple matter of gradual compression, so that the history of a given configuration can be studied in relative isolation from the rest of the grammar and can be based on the configuration’s inherent formal properties in the light of a universal structural logic. Thus a historical derivation is relatable, at least metaphorically or indirectly, to the regular synchronic derivations of generative grammar, particularly the generative semantics model.

Both Langacker and Jacobs, particularly the latter, follow this position. Though of course realizing that there is a difference between a synchronic derivation and a historical derivation of a given surface structure, Jacobs explicitly states that when in doubt a synchronic analysis should conform to the reconstructed historical sequence in preference to alternative synchronic analyses (1975:165). Langacker’s theoretical remarks on this matter are admirable (1976:196), but after reviewing his treatment of UA passives (section 2 above) I would simply comment that it is awfully difficult to avoid unconsciously introducing notions from currently fashionable synchronic theory into historical research (above all in that current theory subtly affects the range of formally and functionally defined morphemes which we are disposed a priori to consider likely cognates).

I am extremely skeptical about combining historical derivations with generative analyses in any manner. I would argue that the basis of morphosyntactic change is not the internal (hence unverifiably predictable) evolution of particular items or patterns, rather the formal and functional skewing which inherited items and patterns are subjected to by the remainder of the grammatical system and by the various functional requirements imposed on this system; in other words, I prefer a more contingent, contextual approach. Moreover, I believe that the original factors behind the skewing are frequently lost without synchronic traces; to recall just one example, the evolution of *-wan- ‘to be lying down’ into a passive suffix *-wan was crucially affected by the original existence of passive *-wa-, which however does not survive as such in the Cusan languages and can be reconstructed only by broader comparative work. Thus synchrony does not recapitulate phylogeny. However, a partial reappraisal of synchronic and diachronic linguistics may be possible if the emerging functional models of language are wisely and sensitively constructed; instead of forcing a premature generative model onto historical linguistics we should be rethinking our synchronic theories on the basis of what we have learned about diachrony.

In short, whereas the normal ideal of scientific progress is the conversion of complex, unwieldy models into simpler, more rigorous and "general" ones, at least in the short term linguistics would be well-served if we move in the opposite direction. The rigor and simplicity of generative models are wholly illusory, achieved through disallowing many critical aspects of language by theoretical fiat. The ideal speaker-hearers who populate Chomsky’s paradise (conceived of as a sort of quakers’ heaven) do not interact with each other verbally and do not court themselves with structural ambivalences, subgutures, gaps, or phonological associations. Yet these are of the essence in historical work, and (I would argue) synchronic as well.

The simplest heuristic correlate of these remarks is that we must look for previously unsuspected interactions in the historical development of seemingly unrelated grammatical components. In a previous work (Heath 1978), I focused narrowly on historical verbal morphology, while Jacobs (1975) focused on a limited range of syntactic constructions and a few related morphological formations. In the present paper I hope to have
improved the analysis by considering the interaction between these two sets of data, particularly in elucidating the development of mediopassive *-ax- (section 3 above). Moreover, even with this improvement the presentation here is clearly incomplete. It goes without saying that the role of hypercorrection in the lower middle class (or whatever correlates this Labovian notion could have had in small tribal societies) in inducing these historical changes has not been explored here. Moreover, I have neglected diffusional factors, including the possibility that morphological formations in neighboring non-UA languages may have helped trigger some of the developments described here. This neglect is not due to an intentional downplaying of diffusional mechanisms (I have recently completed a book on diffusion among Australian languages), but rather reflects my ignorance of the relevant non-UA languages.

footnotes

The generally accepted PNUA-PSSA correspondences include these: PNUA *t = PSSA *t (PWA *t); PNUA *t (fortis) = PSSA *t (PWA *t); PNUA *n = PSSA *n (PWA *n); PNUA *n = PNSSA *i (PWA *i). The major shifts from PWA, then, are *i > *n in PNUA, and *t > *t in PNSSA, in both cases creating a merger with already existing sounds.

The copula sense of Cupan yax is normally restricted to the form siyax- (allegedly *mi-yax-); yax itself normally means 'to say (thus); to do like that' or the like (see below).

Langacker (1977b) discusses Hu passive allomorphs *ri-, *ya, and *ri (the status of the latter is doubtful; Crismes 1960-97 mentions *ri and *ya but not *ri). Langacker derives all three allomorphs from Pre-Hu *riy-ya, which allegedly reflects PWA passive *il-*iwa- with *i > *y after *i. He suggests that *ri goes back to this *ri-ya, while *ri and *yi constitute truncated forms of it. This truncation is not due to simple phonological deletions, but to a special type of morphological restructuring as the language "selects" (a technical term) one syllable or the other to express the morpheme and then eliminates the other syllable.

Since the *y > *i shift is not supported by additional evidence, and since the "selection" analysis is generally ad hoc, I think it is more likely that *ri and *yi simply reflect *i-1i- and *i-ya-.

If *ri is an invalid passive allomorph, with some hesitation I would consider *i-1i-ya- the correct etymology. Note that *i-1i- and *i-ya- are, in other UA languages, transitiveifying (benefactive, causative, etc.), whereas here we have a passive meaning and unitransitiveifying function. Actually, both *ri and *yi also occur in Hu, presumably with a distinct set of verb roots, as indirective-benefactive ("applicative") allomorphs (Crismes 1964-97). Although it is possible that Hu is archaic in this respect (so that even in PNSSA, *i-1i- and *i-ya- had passiveifying function in some combinations), it is perhaps more likely that Hu has undergone a redistribution of voice-marking allomorphs. A more detailed hypothesis can be given when adequate information about derivational morphology (e.g., the distribution of the various passive and applicative allomorphs) becomes available.

By analogy to these forms with mediopassive *-yax-, identical formations with causative -(i)n- have been created. It is, of course, not necessary to assume that the construction ROOT-PRONOUN-(i)n-SUFFIX points to an earlier configuration ROOT + PRONOUN-(i)n-SUFFIX involving an independent verb root *-(i)n-. Once the mediopassive past tense configuration ROOT-PRONOUN-(y)ax-SUFFIX appeared, the fact that in the simpler non-passive forms -(y)ax- and -(i)n- are opposed elements found in the same morpheme slot could easily produce ROOT-PRONOUN-(i)n-SUFFIX by analogy.

5 Why did not the opposite change, the shortening of *-yax- to *-ax-, take place? First, because morphological restructurings prefer extensions (formal renewal) rather than reduction, presumably because they work in opposition to (pure) phonological change, which is most often destructive or neutralizing. Secondly, in this particular example the shift *-yax- > *-ax- in the past tense form would have resulted in a complete phonological merger between this *-ax- and causative -(i)n- in about half of the possible combinations, viz., those with following suffix beginning in * in which /s/ and /n/ are deleted.

The deletion of underlying /y/ before * in common in Cu and Lu; Ca seems to avoid the combination /x-a/ by ephiphenesis in the combinations I have found.

PNUA *s becomes Proto-Cupan * (or *e, if you prefer), which in turn produces Lu o, Cu o, and Ca e. Some further mergers occur in unstressed syllables.

references


---. 1978 Uto-Aztecan *na-Class Verbs. IJAL 44.


---. 1982 A Case of Liberation from Morphology into Syntax: The Fate of the English Genitive-Marker -(e)s.

Richard D. Jants
University of California, Los Angeles