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PAPAGO (*k*)¹

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0. Introduction. In the first sections of this article, I make a number of preliminary observations concerning the grammatical apparatus employed in present-day Papago to conjoin expressions belonging to the major phrasal categories—verbal, nominal, and adpositional.

While the examples cited are drawn from dialects of Papago, the facts which they illustrate hold, by and large, for dialects of Pima directly to the north. The grammatical system with which I am concerned belongs, therefore, to a linguistic tradition which might properly be labeled "Modern Upper Piman." This tradition is quite separate now from the more southerly ones commonly referred to by the term "Pima Bajo" and from other, yet more southerly, members of the Tepiman branch of Uto-Aztecan (hereinafter UA). But the languages of this group are nevertheless closely related, and many aspects of the system which I describe here can be shown to correspond, either directly or indirectly, to elements attested in other Tepiman languages. A principal focus of the last

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sections of this article is historical; in fact, I make a number of suggestions about possible linguistic changes leading to the modern Papago state of affairs.

By way of introduction to the central theme of this essay, I cite some initial examples of the process of coordination, beginning with the coordination of nominal expressions.

The element now used to conjoin nominals in Papago is exemplified in the following sentence:²

- (1) *Mi:loñ c 'u:w-ha:l c ha:l 'o 'e'esa.*
 (watermelon CONJ cantaloupe CONJ squash AUX plant:USIT)
 'He plants watermelons and cantaloupes and squash'.

The conjunction, appearing as *c* in (1), has a second alternant which is often heard, namely, *kc*. For many speakers, this simply alternates freely with *c* in nominal coordination. But for many other speakers, there is some rationale behind the use of one alternant in preference to the other. Some, for example, use *kc* with considerable consistency when the immediately preceding nominal conjunct ends in a full vowel, using *c* otherwise.³ Thus, for these speakers, *c* is preferred in (2a) below, but *kc* appears when the conjuncts are reversed, as in (2b):

- (2a) *Hegam 'o cem-hekid 'ia daiw Lion c Husi.*
 (they AUX always here arrive:PL Leon CONJ Joe)
 'Leon and Joe are always coming here'.
 (2b) *Hegam 'o cem-hekid 'ia daiw Husi kc Lion.*
 (they AUX always here arrive:PL Joe CONJ Leon)
 'Joe and Leon are always coming here'.

² Papago examples are written in the orthography used by Albert Alvarez and the bilingual education programs with which he has worked. It is described briefly in Alvarez and Hale (1970). The system is for the most part straightforwardly autonomous phonemic, except that the letter *e* is used for the high back unrounded vowel /ɨ/. The reference (OHA) following some Papago examples is Saxton and Saxton (1973). Glossing of examples is straightforward, with capitals for grammatical morphemes and lowercase for lexical items, for the most part. Where a morphologically complex Papago item is not, or cannot be, hyphenated, the glosses corresponding to its component "sememes" are joined by a colon—e.g., *koi* (sleep:SG:PERF). Glossing of other Tepiman and other Uto-Aztecan languages follows the same practice. Difficult-to-translate particles are often left unglossed.

³ The actual environment for the *kc* alternant is following a noun ending, underlyingly, in -V(L)V; i.e., a long vowel or vowel sequence (VV), possibly interrupted by a laryngeal (L). This rule was discovered by Albert Alvarez and was the subject of a literacy booklet published by the Papago Language Affairs facility in 1976. The booklet, entitled *Go:k Ha'icu Ce:gig 'O'hona* [book of two nouns] was designed by Alvarez to enable Papago-speaking children to discover the principle governing the *c* ~ *kc* alternation.

This alternation will figure again in my discussion at a later point. I henceforth refer to the pair as *c*, except where the longer alternant is specifically germane to the discussion.

This conjunction is also used to coordinate expressions belonging to other syntactic categories in Papago. Sentence (3) serves to exemplify the use of *c* both in clausal coordination (the first instance) and in conjoining adpositional expressions (the second instance):

- (3) *Kuṣ hi wuḍ a hemajkam c 'iṣ (< 'aṣ) aṣ 'ab 'e-no:nhoi 'ab c 'e-ta:taḍ*
'ab hab ma:s mo g ha'icu doakam. (OHA, p. 252)
 (AUX hi COPULA a human CONJ AUX aṣ there self-hands on CONJ
 self-feet on thus appear SUBORDAUX ART something living)

'It was indeed a person, but about its hands and about its feet it looked like an animal.'

The first instance of *c* here is functioning in concert with the particle *aṣ* to render the contradictory sense corresponding to English 'but'.

The use of *c* as a generalized conjunction in Papago is evidently a recent development. It cannot be traced back to a generalized conjunction either in Tepiman or in Uto-Aztecan. Indeed, it is not necessary to go very far back in Piman linguistic history to reach a time when the expected antecedent of Papago *c* is nowhere in evidence as a conjunction in the usual sense. Thus, for example, in the excellent Jesuit-period *Arte de la Lengua Névome* and appended *Doctrina* and *Confesionario* (Smith 1862), the coordination of nominal expressions is effected by means of the common Tepiman particle **ʔipi* 'also, again' (written *vpu* in the *Arte* and continued in the modern Pima of the region as *ʔp* and *ʔ:p*, at Onavas, for example; compare Papago *'ep*, *'e:p*, recalling that orthographic *e* represents /ɨ/).⁴ This element is placed after, not between, the items conjoined:

- (4a) *N' api doming' ab' fiest-ab' vpu teop' vrha vapcu?* (*Confesionario*,
 p. 10)
 (Q you Sunday on holiday-on also church into enter:USIT)
 'Do you go to church on Sundays and on holidays?'
 (4b) *N' api mu mama, mu dada vpu zi-daha?* (*Conf.*, p. 13)
 (Q you your father, your mother also zi-love)
 'Do you love your father and mother?'

⁴ The date of the composition of the *Arte* is not actually known, nor is the identity of its author. However, Pennington develops an interesting hypothesis, quite possibly correct, about the authorship of the *Arte*, and he dates its composition in the 1660s, rather than the 1770s as previously assumed (Pennington 1979).

The hyphenation here is mine; I have retained the original use of spacing, even where bound morphemes are separated from the stem to which they are in fact attached (e.g., *mu*, which is the possessive and objective prefix *mi-*).

So far as I am aware, nowhere in the early documents does nominal coordination involve an element which can be related to the *c* (or *kc*) of modern Papago. This Papago conjunction does, however, have a discernible source in Tepiman, and ultimately in Uto-Aztecan. I suggest in this article that the modern generalized use of *c* has arisen through reanalysis of elements, belonging originally to the verbal morphology, whose function was that of clausal subordination.

To appreciate this possibility, it is first necessary to look at the full range of facts relevant to the coordination of predicate expressions in modern Papago. Before this, however, I shall make certain elementary remarks concerning the phrase structure of Papago.

An elementary phrase structure of Papago, expressed in the notation of the X-bar theory of the categorial component (cf. Chomsky 1970 and Jackendoff 1977), includes at least the following rule schemata:

(5a) $X''' \rightarrow \text{Spec}_X (X'') (V''')$

(5b) $X'' \rightarrow [-V]''' X' (V''')$

(5c) $X' \rightarrow \dots X$.

The category Spec_X comprises the AUX (where X is V, i.e., the verb, which heads the sentence), the Det (i.e., determiner, where X is N), and the class of spatial specifiers (where X is P, i.e., postposition). In the initial expansion of X''' , the head (X'') is defined as optional to account for cases in which the specifier is the sole constituent in a particular phrase at surface structure. At the first and second expansions, a phrase-final clause (V''') is permitted—this accounts for embedded sentences, for example, relative clauses and complements. The rule schemata X'' indicate that nonclausal complements are prenuclear in Papago. This is not always true at surface structure, however. We may assume, for present purposes, that Papago makes use of extraposition to derive alternative word orderings (cf. Hale, Jeanne, and Platero 1977, for discussion).

The sentential specifier, AUX, embodies aspectual and modal elements together with elements marking the person and number of the subject. In addition, the AUX may appear with one or another of the prefixes *n-* (interrogative), *m-* (general subordinating), or *ku-* (obviative). The last-mentioned of these will figure again in the discussion of Papago phrasal coordination. A prefixed AUX regularly appears in clause-initial position, while a prefixless AUX is, almost without exception, placed in "second position."

1. **The proximate conjunction.** Sentence (3) illustrates the use of the conjunction *c* in the coordination of clauses. Other examples of this element, in the same function, are given in:

(6a) *Pi:wlo 'o 'am 'i'it hegai sa'i c gđ hu to'aw heg 'eda walin.*

(Pete AUX there scoop that trash CONJ there away put that in barrel)

'Pete is scooping up that trash and putting it over there in that barrel'.

(6b) *Ñ-ki: 'o 'o'ot-ahim c hemu ahawa pi 'o'ot nant pi 'i kegc.*

(my-house AUX leak-PASTPROG CONJ now then NEG leak AUX pi INCEP repair:PERF)

'My roof was leaking and now it is not leaking, because I fixed it'.

(6c) *Husi 'o cem si 'e-hascud c pi hu: g mu:ñ.*

(Joe AUX *cem si* self-aggrandize CONJ NEG eat:PERF ART beans)

'Joe is trying to be somebody, and he didn't eat the beans'.

These sentences are fairly representative of one of the uses of *c* in Papago. However, it is not always *c* which shows up when clauses are conjoined. There are special conditions on its use.

First, the above sentences have in common the fact that the first clause is in the imperfective aspect—in addition to the simple imperfective form represented in (6a) and (6c), the past progressive in *-(a)him* (as in 6b) counts as an imperfective. This is one of the conditions on the use of *c* in clausal coordination. In the "canonical" use of this conjunction the immediately preceding clause is consistently imperfective.

There is a second feature which the sentences of (6) have in common and which is typical in the canonical use of Papago *c*. The clauses conjoined by this element share their subjects. I use the term "proximate" to refer to *c* in its function as a clausal conjunction, following a usage imported into Uto-Aztecan from Algonquian linguistic usage (by Grimes 1964; and adopted by others as well, e.g., Hale 1965, Voegelin and Voegelin 1975, and Jeanne 1978). Proximate coordination can be opposed to "obviative" coordination, in which the subjects of the coordinate clauses are distinct. Obviative coordination in Papago, to be exemplified later, makes use of the auxiliary prefix *ku-*. The opposition involved here, to which a few Uto-Aztecanists have applied the Algonquianist term "obviation," is better known as "switch reference" (cf. Jacobsen 1967, an excellent introduction to the topic).

Proximate coordination of an imperfective clause with a following clause of either aspect is accomplished by means of *c*, as we have seen. Where the first clause in coordination is perfective, however, a distinct form of the proximate conjunction is used. This "perfective" proximate

conjunction has the shape *k*, and it is illustrated in the sentences of (7). This conjunction may fuse with a preceding clause-final verb, thereby blocking certain phonological rules which would otherwise apply to a perfective verb (in particular "truncation"; cf. Hale 1965, for a discussion of the phonology of perfectives in Papago), and a "fused" *k* conjunction will be written attached to its verb by means of a hyphen.

(7a) *Sa ma:s mat ha'icu m-ba'ă-k m-wiñwua.*

(rather seem SUBORDAUX something you-swallow:PERF-CONJ you-regurgitate:PERF)

'It rather looks like something swallowed you and spit you up (from your rumpled appearance).'

(7b) *Nt o 'i wu:sañ-k o ñei g mehĩ.*

(AUX FUT INCEP exit:PERF-CONJ FUT look:PERF ART fire)

'I'm going to go out and look at the fire'.

(7c) *Juđumĩ 'ant ce:g-k gatwi.*

(bear AUX find:PERF-CONJ shoot:PERF)

'I saw a bear and shot it'.

The V-CONJ fusion observed here is normal, when the opportunity arises, but it is not obligatory (though dialects may differ in this regard). This fusion has blocked truncation—had fusion not taken place, the perfective verbs of the initial clauses of (7a)–(7c) would have appeared as follows: (a) *ba:* (swallow:PERF); (b) *wu:s* (exit:PERF); (c) *ce:* (find:PERF). In the sentences of (8) and (9), fusion is not applied, either because the opportunity does not arise, or because the option is simply not taken:

(8a) *Wisilo 'ant o cem hema wu: k 'an si wipidut-ahim g ñ-wijina (kc 'oi-a aš hejel ñ-biha).*

(calf AUX FUT *cem* one rope:PERF CONJ there *si* swing-PASTPROG ART my-rope (CONJ so just self me-wrap:PERF))

'I was going to rope a calf and was swinging my rope hard (and I just wrapped it around myself).'

(8b) *Ma:gina 'atkĩ melckwua g 'u:s (mo g wainomĩ 'ab 'ab wul) k 'atkĩ m-heheliga aš we:sko 'i gantađ.*

(car AUX bump:PERF ART pole (SUBORDAUX ART wire there on tied) CONJ AUX ART your-laundry just everywhere INCEP scatter:PERF)

'The car struck the pole (on which the wire clothesline was tied) and scattered your clothes all over'.

(9) *M 'ant o ha-ku'iwañ g řu:dagĩ k 'am o řul g mu:ñ.*

(there AUX FUT some-boil:cause:PERF ART water CONJ there FUT throw:PL:PERF ART beans)

'I'll boil up some water and throw in some beans'.

In (8a), evidently, the option to fuse the verb and the following conjunction was simply not taken. In (8b) and (9), fusion is blocked, since the verb of the initial clause is not final.

2. Obviative coordination. Proximate coordination (as in 6–9 above) is normal when the coordinate clauses share their subjects, that is, when the subject of the second clause (normally nonovert) is coreferential with that of the first clause (overt or nonovert). Obviative coordination, on the other hand, is normal when the subjects of the two clauses are distinct in reference (whether they are overt or not). The contrast can be observed in the following pair of sentences:

(10a) *Ñ 'alidag 'o gegosid g gogs c ha-'i'icud g kakawyu.*

(my child AUX feed ART dog CONJ them-water ART horses)

'My kid feeds the dog and waters the horses'.

(10b) *Ñ-'alidag 'o gegosid g gogs k g ñ-we:nag ha-'i'icud g kakawyu.*

(my-child AUX feed ART dog OBVAUX ART my-sibling them-water ART horses)

'My kid feeds the dog and my brother waters the horses'.

Obviative coordination is signaled not by a conjunction, strictly speaking, but by use of what I shall call the "obviative auxiliary" (OBVAUX) on the noninitial clause, or clauses, of the coordination. The force of the obviative auxiliary is to signal a switch in "topic." Since the topic of a sentence is quite regularly, but with some exceptions, the subject, a switch in subject will warrant use of the obviative auxiliary.⁵ The latter, therefore, could quite aptly be thought of as a signal of "switch reference." Morphologically, the obviative auxiliary consists of the prefix *ku-* followed by the remainder of the AUX (i.e., person marker, aspect marker, mood marker, if present). Under certain conditions (e.g., third-person imperfective unmarked mood), the "remainder" of the AUX will be phonologically null. The stranded *k* appearing in (10b) is, therefore, not to be confused with the proximate perfective conjunction *k*, which is an utterly different element. The *k* of (10b) is simply the residue of *ku-*, following deletion of the vowel /u/ unprotected by phonologically constituted auxiliary material in this third-person form. A certain superficial complexity is occasioned by the additional fact that, in modern colloquial Papago, the obviative prefix *ku-* normally deletes when it is followed by phonologically nonnull auxiliary material, as in:

⁵ Under certain conditions, syntactically distinct subjects may appear in clauses linked by the proximate conjunction. In all cases of which I am aware, the syntactically distinct subjects are, in some sense, semantically identical—e.g., the SNOW is melting and the WATER (*nee* SNOW) is flowing.

- (11) *Husi 'o 'am ha'icu ñ-a:gid ñ pi 'ap ka: heg heka j mo s-jupij ñeok.*
 (Joe AUX there something me-tell OBVAUX NEG well hear that for
 SUBAUX s-quietly speak)

'Joe was telling me something and I didn't hear him well for the reason that he speaks so softly'.

Here, the obviative auxiliary is *ñ*; in its full or predeletion form, it would have appeared as *kuñ*, which would have been an option in (11). The reduced form *ñ* consists solely of the first-person marker, the residue following deletion of *ku-*.

I have chosen not to analyze the prefix *ku-* (or its zero alternative) as a coordinating conjunction in contemporary Papago—fused, by means of some rule of phonology, onto a following auxiliary—primarily because its use goes far beyond that of coordination. It can function as a subordinator (e.g., on obviative sentential complements of certain verbs such as *'am ke:s* 'to elect, appoint to . . .', *'a:gid* 'tell to . . .', where it can alternate with the general subordinator *m-*; and in the protasis construction to be described later), and it can initiate clauses which are syntactically independent. It can initiate a paragraph or even a discourse, and it quite commonly initiates the separate utterances of interlocutors in conversational exchanges. The following sentence serves to illustrate the use of the obviative in the complementizer function:

- (12) *Napt o ñ-we:mt nt o ñ-wapko?*
 (QAUX FUT me-help:PERF OBVAUX FUT me-wash:PL PERF)

'Will you help me to do my washing?'

The obviative auxiliary here is *nt*, reduced from *kunt* (in which the auxiliary is the first-person "t-form," i.e., the form used in the perfective and in the future). The following paragraph serves to illustrate the use of the obviative in its usual "topic switching" function in modern Papago:

- (13) *'Am hu hebai hema meḍ hegām gogoliwis, ṣ hema we:maj g 'o'odham. Kuṣ s-toñ ṣ hab kaj: " 'I: ṣa'ī s-toñ, 'ab g 'i ha-ku:kp g wipindañ, t o t-hehogī." Ṣ 'ab ahawa 'i ha-ku:kp ṣ g ha-wahuddag . . . meḍ. . .*

(there away where one run those contraries, OBVAUX one accompany ART Papago. OBVAUX s-hot OBVAUX thus say: "Oh, very s-hot, 'ab IMPERATIVAUX INCEP them-close ART windows, OBVAUX FUT US-COOL:PERF." OBVAUX 'ab thereupon INCEP them-close OBVAUX ART their-sweat . . . run . . .)

'There was once one of those contraries going in a car, and a Papago was with him. And it was hot, and he (the contrary) said: "Oh, it's hot; close the windows and it will cool us." And he (the Papago) closes them and their sweat . . . pours . . .'

The narrator uses the reportative mood here (indicated by means of the mood suffix *-s*), except in the direct quotation. In addition, the obviative *ku-* is deleted in the majority of instances.

The morphological details of both proximate and obviative coordination have been briefly sketched in this and in the preceding section, and some indication of their syntax has been given as well. I turn now to the problem of integrating these constructions into the phrase structure of Papago.

3. Coordination in the Papago base. The preliminary phrase structure grammar of Papago outlined in the introduction does not obviously accommodate either of the types of coordination discussed in the preceding two sections. It does not obviously do so, but, properly conceived, the system does in fact incorporate the obviative constructions, to some extent at least. First, sentences of the type represented by (12) above are clearly accommodated by rules (5a) and (5b), which permit a dependent clause to appear finally, either at the three-bar level or at the two-bar level. Second, I think it is appropriate to view obviative coordination of the type represented in (13) as consisting simply of sentences "in sequence." In a sense, no special provision needs to be made for this, since one could, by convention, simply understand the initial sentential symbol *V'''* to stand for any number of sentences in sequence, without special syntactic connection. The semantic connections which might be said to exist, or do in fact exist, could be supplied by some principle of logical form activated by the presence of the obviative prefix on the auxiliary. However, I suspect it will turn out that some "grouping," or hierarchical organization, of obviative sequences is desirable—for example, (A B) C, versus A (B C), versus A B C, and the like. If this is so, then it is necessary to introduce a rule for clausal sequencing. The following simple schema will do:

- (14) $V''' \rightarrow V'''*$.

I intend by this rule to permit the maximum projection of the V-category, that is, the sentence, to be expanded as a sequence of any number of full sentences, thereby obtaining one type of clausal coordination.

Proximate coordination is not to be accommodated in this manner, however. On the contrary, proximate coordination is a special case of a more general system of "true conjoining," extending beyond the clausal category in modern Papago. Before this true coordination can be built into the grammar, however, some details of form must be mentioned.

In the proximate coordination of a pair of clauses, the subject of the second clause is regularly missing (but see n. 5). Since the conjunction

itself encodes all necessary information concerning the identity of the subject, its inclusion in the second clause as an overt nominal would be redundant (in the canonical use of the proximate conjunction, that is). What is of interest here, however, is the fact that the auxiliary of the second clause may also be missing. In fact, the second auxiliary in proximate coordination may be overt only if it contains a mood marker—hence the following contrast:

(15a) 'Ali 'at 'i ge:s-k s-ko'okam 'e-ju.

(child AUX INCEP fall:PERF-CONJ s-hurtfully self-do:PERF)

'The child fell down and hurt itself'.

(15b) 'Ali 'atkī 'i ge:s-k 'atkī s-ko'okam 'e-ju.

(Child AUX INCEP fall:PERF-CONJ AUX s-hurtfully self-do:PERF)

'The child apparently fell down and apparently hurt itself'.

In (15b), the auxiliaries bear the evidential mood suffix *-kī*; consequently, the second auxiliary need not, and normally would not, delete.

Given the observation just made, proximate coordination of clauses in Papago has two surface syntactic forms, as depicted in:

(16a) Spec_V V'' CONJ Spec_V V''.

(16b) Spec_V V'' CONJ V''.

And these are duplicated in the coordination of other major categories as well. Thus, for the noun phrase, one finds both:

(17a) Spec_N N'' CONJ Spec_N N''.

(17b) Spec_N N'' CONJ N''.

And, for the adpositional category, both (18a) and (18b) are found:

(18a) Spec_P P'' CONJ Spec_P P''.

(18b) Spec_P P'' CONJ P''.

The two forms of coordination are therefore general across the major categories of Papago, as depicted in:

(19a) Spec_X X'' CONJ Spec_X X''.

(19b) Spec_X X'' CONJ X''.

The more complete coordinate construction, that is, with overt specifier in noninitial conjuncts, can be accommodated in our elementary grammar by means of the following additional rule of phrase structure:

(20) X''' → X''' (CONJ X''')*.

Since the nonfinal conjuncts here are three-bar structures, they will contain their specifiers.⁶

⁶ As do many of the rules advanced here, this one overgenerates and must be limited in some way. For example, the *k*-form of the conjunction may not appear except after a

The second coordinate construction (which is, incidentally, most frequent textually) might be derived from the fuller one by means of a rule which deletes a semantically empty (or redundant) specifier when it is immediately preceded by a conjunction (CONJ). However, split nominal constructions, like that in (2) above, in which a two-bar construction (possibly coordinate, as in 2) is separated from its determiner, suggest that we must recognize a phrase structure rule which introduces conjoined two-bar structures. The necessary additional phrase structure rule is given in:

(21) X'' → X'' (CONJ X'')*.

Rules (20) and (21) introduce an element which I have glossed CONJ. At this level of abstraction, it is appropriate to think of this as a generalized conjunction. Of course, it has different shapes under different circumstances. With nonverbal conjuncts, it appears as *c* or *kc*, and the perfective proximate conjunction *k* must, by some (perhaps interpretive) principle, be prevented from appearing with nonverbal conjuncts in the synchronic grammar of Papago. With verbal conjuncts, on the other hand, the proximate conjunctions indicate more than mere coordination—they indicate the proximate category itself, and the choice of the particular form (*-c* or *-k*) is dependent upon the aspect of the preceding clause. All of this must, of course, be built into the grammar of Papago. I shall not do this here, though I foresee no particular problems in completing this portion of the grammar.

Before leaving this section, let me briefly mention and exemplify another important use of the proximate conjunction and the obviative auxiliary. This is what I call the "protasis construction," exemplified in the sentences:

(22a) *Mat o ša gahī wu:šañ-k o cucša g tai.*

(SUBORDAUX FUT if beyond exit:PERF-CONJ FUT extinguish:USIT ART fire)

'If he passes (the exam), he'll be fighting fires'.

(22b) *Mapt hascu o 'i taccud c heg o bei.*

(SUBORDAUX what FUT ever want:FUT:IMPERF CONJ that FUT take:PERF)

'Whatever you want, you can take'.

perfective verb. I am not sure which to suggest of the many ways this constraint could be effected, since I am not sure what the theoretical issues are in this connection. For present purposes, I simply assume that cases of overgeneration by rules of phrase structure will be handled in some way or other. And I assume further that the problem here is not relevant to the issues of concern in this article, bearing in mind, of course, that this decision could be seriously in error.

(22c) *Mat hascu 'i gatwi g Huan nt heg o hu:*

(SUBORDAUX what ever shoot:PERF ART John OBVAUX that FUT eat:PERF)

'Whatever John shot, I'll eat that'.

Without going into great detail concerning their internal structure, I should point out that the protasis constructions have a wide range of semantic functions—including the conditional (as in 22a), the correlative (as in 22b and 22c), and the temporal relative (not illustrated here, but essentially the same in form as the conditional). The protasis is evidently a subordinate clause, its subordination normally (but not necessarily) being marked either by the general subordinator *m-* (as in 22) or by the obviative prefix *ku-*. What is of special interest here is the fact that the transition between the protasis and the main clause is identical to that observed between the first and second of two coordinate clauses.

It is quite possible that the protasis constructions are already accommodated within the grammar we are developing. That is to say, the protasis and main clause in sentences of the type represented in (22) may, from the strictly syntactic point of view, simply be coordinated clauses—defined by rule (14) in the case of the obviative, by rules (20) and (21) in the case of the proximate. The possibility should, however, be kept in mind that protasis clauses are syntactically subordinate and should be introduced as such by rules of the base. It is possible, in fact, that they should be introduced as a preauxiliary constituent of the sentential specifier. The following rule schema (very tentatively formulated) would account for the observed patterns:

$$(23) \text{Spec}_V \rightarrow V''' \left\{ \begin{array}{l} \text{OBVAUX} \\ \text{CONJ (AUX)} \end{array} \right\}.$$

Biclausal (protasis-apodosis) constructions of the type illustrated in (22) have close paraphrases in which the dependent clause is postposed. In the case of semantically obviative constructions, this is already provided for in our grammar, by virtue of rules (5a) and (5b). Thus, a close paraphrase of (22c) is:

(24) *Nt o hu: hegai mat g Huan hascu 'i gatwi.*

(AUX FUT eat:PERF that SUBORDAUX ART John what ever shoot:PERF)

'I'll eat whatever John shot'.

In proximate (i.e., shared-subject) cases, however, the form of postposed conditionals, correlatives, and temporal relatives is quite different, in the prevailing usage. A special auxiliaryless construction, which I call the "participial," is used for this. The verb in a participial construction bears a suffix, whose form depends upon the aspect of the verb. The most prominent of these participial suffixes (glossed -PART) are *-c* (after

imperfectives) and *-k* (after perfectives), that is, identical in shape to the proximate conjunctions to which they are etymologically related. The participial verbs, therefore, are identical in form to the V-CONJ fusions mentioned earlier. However, the participials must be distinguished from the conjunctions, since a participial verb may appear nonfinal within its own clause (i.e., it may be followed by its complements), while a V-CONJ fusion may never do so (a fact which follows automatically from the way in which the fusions arise).

Participial constructions are exemplified in:

(25) *'Ia 'apt o koi, sa taccu-d-c.*

(here AUX FUT sleep:PERF, if want-FUT:IMPERF-PART)

'You can sleep here, if you want'.

(25b) *Pt o s-ko'okam 'e-ju:, sa 'i ge:s-k.*

(AUX FUT s-hurtfully self-do:PERF, if INCEP fall:PERF-PART)

'You'll hurt yourself if you fall'.

(25c) *Juđum 'ađ cem s-mu'amk 'eđa wuđ 'ali-k-c.*

(bear AUX cem s-kill:DESIDERATIVE then COPULA child-INCREMENT-PART)

'He used to want to kill a bear when he was a child'.

Since participials necessarily lack a specifier, I assume that they are introduced as two-bar structures, in clause-final position, and their subjects, necessarily nonovert, are interpreted by means of a special control rule which binds them to the subject of the main verb—that is to say, participials are evidently structures of obligatory control.

Although many details of Papago grammar have not been touched upon in this discussion, and although none has been given a full treatment, we have enough background now to turn to a consideration of the historical developments which might have given rise to the modern Papago system of conjunctions.

4. Possible UA antecedents. The obviative prefix of Papago may be derived from the Uto-Aztecan subordinating suffix **-ku ~ -ko*. This element is continued in a number of attested Uto-Aztecan languages, some examples of which are listed here: Numic *-ku* (e.g., Miller 1975:95), Hopi *-q* (< /-qö/; Jeanne 1978:chap. 3), Huichol *-ku* (Grimes 1964:65), Mayo *-k ~ -ko* (Collard and Collard 1963:207-11), Tubar *-ko* (Lionnet 1978:44). The Mayo and Tubar identifications may be incorrect. Generally, however, an element of this form is widespread in the family and is characteristically obviative where encountered. The vocalism of the ending is reconstructed as variable. Numic quite consistently shows /u/

(suggesting UA **u*), but Hopi and the southern languages show a vowel reflecting UA **o*. The vocalism of the obviative prefix in Tepiman is variable within that branch itself. Papago and Tepecano have *ku-*, but Nevome and the modern Pima of Ónavas and the Pima of the Sierra have *ko-*. The Pima of Caborca during the Jesuit period, like modern Papago, had *ku-*.

The Papago conjunction *c* and the participial ending *-c* are most likely derived from the Uto-Aztecan element *-*tš*, continued in Hopi by the proximate subordinator *-t* (< /-*tš*/; Jeanne 1978:chap. 3). It is quite possible that this element is also contained in Numic by an ending of roughly the same form /-*tš*/, appearing in Shoshone, for example, as *-tš*ⁿ (Miller 1975:91) and having a variety of functions, including that of proximate subordination. Among southern languages, Huichol possesses a proximate ending *-tš* (Grimes 1964:65), whose function is virtually identical to that of Papago (-)*c* in its protasis and participial uses. The vocalism of the Huichol form, however, is not expected, since Huichol /*š*/ continues UA **u* not **š*. In this connection, it should be pointed out that the Tepiman vowel in this ending cannot, at the moment at least, be determined, since the modern languages continuing it have lost the final vowel (which must, at least, have been a high vowel to account for the palatalization in Papago), and, unfortunately, the early Jesuit records of Nevome and Pima systematically merge /*š*/ and /*u*/ to orthographic *u*. Thus, the Tepiman imperfective proximate ending could have either been *-*tš* or *-*tu*. If the initial portion of the Mayo subordinator *-teko* (Collard and Collard 1963) can be used in testimony, then the original southern vocalism was probably /*š*/, not /*u*/. The Aztec connective *-ti-* (figuring in verb-verb compounds; cf. Anderson 1973:41), almost certainly related to the ending in question here, does not help to decide the quality of the vowel, except to confirm that it was high.

The perfective proximate (-)*k* of Papago is quite clearly derived from an earlier *-*ka*. The vowel here is not in doubt, because the Jesuit records, from the period prior to final-vowel loss in Piman, clearly show /*a*/ for this element, and their rendition of low vowels is consistently accurate. Outside Tepiman, Huichol offers the best evidence of a Uto-Aztecan reconstruction *-*ka* having the desired form and function. The Huichol ending is *-ka* (Grimes 1964:65), and it closely parallels Papago (-)*k* in its protasis and participial uses. In fact, the Huichol pair *-tš*, *-ka* closely parallels their putative Papago cognates (-)*c*, (-)*k* not only in form and proximate function, but also in their aspectual associations; the matching here is nearly perfect and is not, to my knowledge, equaled anywhere else in the Uto-Aztecan family (across major branches, at least). The form and function of the Mayo gerundial suffix *-ka* (Collard and Collard 1963:210) also supports this reconstruction outside Tepiman. The Aztec interverbal connective element *-ka* (Anderson 1973:41),

like its fellow connective *-ti-* mentioned above, may likewise reflect an early UA system of proximate subordination. Within Numic, the Southern Ute participial ending /-*ka*/ (written *-ga*; Ute Language Program 1979:86) closely approximates the Tepiman *-*ka* in form and function. And Hopi *-qa*, a likely candidate, is primarily a nominalizing element (Jeanne 1978:chap. 4 and Voegelin and Voegelin 1975) and is not now exclusively proximate.

5. The syntax of UA subordinate constructions. The subordinators cited in the preceding section serve a number of functions in the modern languages, including a type of subordination closely similar to that termed "protasis" in my earlier discussion of Papago. I believe that this function is well enough attested in the UA daughter languages to be reconstructed for the family as a whole. Thus, I assume that the following structural profile—perhaps defined by a rule introducing the subordinate clause in "specifier position"—should be attributed to Proto-Uto-Aztecan:

- | | | |
|------|--|--|
| (26) | protasis | main clause |
| | ⏟ | ⏟ |
| | (. . . V-SUB) _{V^m} | (remainder) _{V^{m-1}} |

Here, the notation V^m stands for the maximum projection of the sentential (i.e., verbal) category, and V-SUB symbolizes the verb-plus-subordinator word which heads the protasis clause. And V^{m-1} symbolizes the portion of the main clause which follows the specifier position (i.e., it is the maximum-minus-one level of structure).

The following Huichol sentences (taken from Grimes 1964:65) illustrate this protasis construction, outside Tepiman:

- (27a) *kuuyéiká-tš pñéci'uzéi.*
(walk:along-PROX:CONCUR he:saw:me)
'As he (A) was walking along, he (A) saw me'.
- (27b) *núa-ka pñéci'uzéi.*
(arrive-PROX:ANTECED he:saw:me)
'After he (A) arrived, he (A) saw me'.
- (27c) *núa-ku pñéci'uzéi.*
(arrive-OBV:ANTECED he:saw:me)
'After he (A) arrived, he (B) saw me'.

I turn now to the developments within the Tepiman branch.

6. The obviative. If the Papago obviative prefix *ku-* and the cognate *ku- ~ ko-* found in other Tepiman languages are indeed related to the Uto-Aztecan obviative subordinating suffix *-*ku ~ ko*, then a radical

(i.e., modern *-t* and *-k*). But it is like Névome, also, in that these elements are consistently suffixal. So far as I know, they are never separated from the verb, which must be final in the clause which contains them (despite generally free word order otherwise in the Pima of Ónavas). In my record of this language, the endings are consistently proximate (possibly an accidental feature of my data, elicited with Papago very much in mind). As in Papago, but unlike Névome, a predominant function of these elements is the coordination, rather than the subordination, of clauses (from a semantic point of view, at least, and syntactically, if subject case-marking is telling):

(35a) 'A:n niokĩ-him-t ni'ĩ-him.

(I speak-PRES-PROX sing-PRES)

'I am speaking and singing'.

(35b) 'Ig niok-t vi:s taş ni'ĩ.

(that speak-PROX all day long sing)

'He speaks and sings all day'.

(35c) 'A:n hima hod bihi-k da'it.

(I one:OBJ stone take:PERF-PROX throw:PERF)

'I picked up a stone and threw it'.

(35d) 'A:n k haivan hug-k mumku:d.

(I ART:OBJ meat eat:PERF-PROX sicken:PERF)

'I ate the meat and got sick'.

In the Pima of the Sierra, the apparent continuation of Uto-Aztecan **-ka* (i.e., *-k*) is consistently suffixal, and its function is virtually identical (so far as I can tell) to that of its Ónavas counterpart:

(36a) 'A:n k va:kis' mi'ã-k k 'ovgər vahävə-k hu:.

(I ART:OBJ cow kill:PERF-PROX ART:OBJ brain extract:PERF-PROX eat:PERF)

'I killed the cow, extracted its brain, and ate it'.

(36b) G li 'o:b gi:ş-k k 'a'-kov hikt'.

(ART small person fall:PERF-PROX ART:OBJ self-forehead cut:PERF)

'The child fell down and cut its forehead'.

The Sierra equivalent of the Papago and Ónavas imperfective proximate endings is not altogether straightforward. Its functions are closely similar to those of its Ónavas counterpart, but its form—that is, *(-)'*—is to some extent unexpected. The problem is the palatalization. This could only have been induced by a preceding *i*-vowel, which in fact appears, under the appropriate conditions of epenthesis. But the source of this *i*-vowel is unclear. I suspect that this form reflects a reanalysis in which the proximate ending was detached from some *i*-final form or other and

generalized to all occurrences. That such a reanalysis could have occurred is made plausible by the additional observation that the *(-)'* of Sierra Pima is also extended to nominal coordination (i.e., just as it apparently is in Papago). Examples of proximate coordination by *(-)'* are given in (37)—word boundaries and transcription of epenthetic *i* are rendered as in my original field notes:

(37a) G k#l 'a'-na:nək-kəd ka:-k-t' (k) 'a'-vupi-kəd niid.

(ART man self-ear:PL-with hear-INCREMENT-PROX (ART:OBJ) self-eye:PL-with see)

'A man hears with his ears and sees with his eyes'.

(37b) Gogis' ko'ok it' kui-him.

(dog sick PROX howl-PRES)

'The dog is sick and howling'.

While the modern Piman languages briefly surveyed here have developed in somewhat different ways, neither the difference among them nor their remove from the state of affairs represented by Névome is very great.⁷ It is not at all unreasonable to suggest that at a time not very long ago, perhaps not much earlier than the writing of the *Arte* in which Névome was reported, the proximate endings were involved in a single uniform syntactic construction directly descended from the protasis construction attributed to Uto-Aztecan (i.e., the structure of 26 above). Although the obviative version of the structure had almost certainly been reanalyzed, the proximate construction depicted in (38) persisted in Piman and was probably still in full use through, and quite possibly for some time after, the Jesuit sojourn in the Pimería:

(38) protasis main clause remainder

$$\overbrace{(\dots V \left\{ \begin{array}{l} -ti \\ -ka \end{array} \right\})_{Vm}} \quad \overbrace{(\dots V)_{Vm-1}}$$

This structure, I contend, is the one which anteceded the protasis and participial constructions of modern Papago and which constitutes the source of the modern system of conjunctions found in that language.

8. Papago. In the canonical Névome instantiation of (38) (i.e., as described in the *Arte*) the complex sentence as a whole had only one instance of the so-called auxiliary (assuming this to be a genuine construct in Névome), and this auxiliary appeared in the main clause remainder, not in the protasis. In order to get from the structure depicted in (38) to the type of structure which exists in modern Papago,

⁷ In Tepecano and Southern Tepehuan, the modern descendants of **-ti* and **-ka* have apparently become finite inflections (see the longer version of this article for examples).

where the auxiliary appears regularly in the first clause, and only secondarily in the second, we must somehow contrive to get the auxiliary forward in (38) at some pre-Papago stage. The data of Névome, taken in their totality, including not only the grammar, but the *Confessionario* as well, offer some suggestions in this regard. While the auxiliary associated with the main clause may normally have followed the dependent clause, it often preceded it, particularly in the interrogative form (initiated, as in Papago, by the prefix *n(a)-*), perhaps to embrace the dependent clause within the scope of the polar question operator. Thus, in the *Confessionario*, one finds examples conforming to the pattern represented by:

(39) *N' ap' ta pim' hucudoi hiboína-ca muha?*

(Q 2d:sg ta NEG who bewitch:PERF-PROX kill:PERF)

'Have you ever, bewitching someone, killed him?'

(I.e. 'Have you ever killed anyone by bewitching him?')

The string *n' ap' ta* here is the exact equivalent of the Papago QAUX complex *napt*. If the *Confessionario* data are trustworthy, and if they can be taken to illustrate a general syntactic possibility in the language of the period, then it is evident that Névome—and presumably its sister Piman languages as well, including the ancestor of Papago—permitted a protasis subordinate clause to appear in post-AUX position within the matrix clause. Thus, in addition to the profile depicted in (38) above, Piman of the Névome era also had the following:

(40) (AUX (. . . V $\left\{ \begin{array}{l} -ti \\ -ka \end{array} \right\} \right)_{Vm} \dots V)_{Vm}$

This probably persisted as an alternative construction as long as Piman was predominantly verb-final, as Névome was. But as free word order developed, resulting ultimately in the system described earlier for Papago, it is extremely likely that the dependent clause in this sort of construction was attracted to the right margin of the sentence—this is observationally a much-favored (or unmarked) arrangement in so-called scrambling languages. The end point of this latter development is the participial construction of modern Papago.

But this is not the only thing that happened to (40), evidently. That profile is susceptible to reanalysis. In an extraordinarily large percentage of actual instances, the auxiliary will be as appropriate to the verb of the dependent clause as to that of the matrix—this will always be the case where the two clauses agree in aspect. Thus, for example, the Névome sentence (39) is virtually identical in its profile to the modern Papago sentence:

(39') *Napt pi heđai hiwhoin-k mua?*

(QAUX NEG who bewitch:PERF-PROX kill:PERF)

'Have you not (ever) bewitched anyone and (thereby) killed him/her?'

And the meaning, I suspect, is essentially the same. But in the Papago sentence, the auxiliary is not exclusively associated with the main clause—it is most likely associated jointly with the coordinate predicates (i.e., it is specifier to the coordinated two-bar structures following it). In the Névome of (39), I imagine that the auxiliary is properly construed only with the final (and main) verb, while the suffixed predicate *hiboína-ca* is subordinate syntactically (whatever the facts may have been semantically).

Given the fact that the protasis clause is often semantically coordinate to the matrix, a reanalysis assigning the auxiliary to the embedded clause (in a structure like 40) would not be at all surprising. This alone would give the following profile:

(41) ((AUX . . . V $\left\{ \begin{array}{l} -ti \\ -ka \end{array} \right\} \right)_{Vm} \dots V)_{Vm}$

This is essentially the proximate protasis construction of modern Papago and, very probably, the immediate precursor to the coordinate structures of that language as well.

The next step in the indicated direction is a reanalysis which, so to speak, formalizes the semantic coordination as a genuine coordinate structure in syntax by "promoting" the erstwhile suffixes to the status of coordinate conjunction, introducing them as such by means of a coordinate structure schema within the phrase structure component of the grammar. Since the second predicate in (41) lacks the auxiliary (i.e., the sentential specifier), it would appear, from the structure profile itself, that it is the core of the sentence (i.e., the two-bar structure) that enters into the coordination and that the auxiliary serves, umbrella fashion, for both predicates. I suggest that this two-bar coordination was, in fact, the first to enter the language:

(42) AUX (. . . V)_{V''} CONJ (. . . V)_{V''}.

Notice that this corresponds precisely to the coordination depicted in (16*b*), repeated here for convenience:

(16*b*) Spec_V V'' CONJ V''.

The coordinate subpart of this would be defined by the phrase structure rule given in (21) and repeated here:

(21) X'' → X'' (CONJ X'')*.

The reanalysis being suggested here, in fact, amounts to the introduction of this rule into the language ancestral to modern Papago.

Once this rule was introduced, it was generalized (probably at once) to all categories. Its generalization follows in part from the nature of

phrase structure (as conceived within the X-bar theory) and in part from the nature of true coordinate structures.

The change would follow from the theory of phrase structure, since that theory places the highest value on generalizations across categories. Thus, assuming, as seems reasonable, that there is a universal rule of coordination, having roughly the form indicated below (setting aside details concerning the surface positioning of the conjunction):

$$X^n \rightarrow X^n (\text{CONJ } x^n)^*$$

and assuming that this is universal not in its instantiation but in its universal availability for potential instantiation, as soon as Papago acquired the rule:

$$V'' \rightarrow V'' (\text{CONJ } V'')^*$$

it is likely that it generalized to the other major categories, giving the form presented in (21).

The particular way in which the coordination rule entered Papago—that is, via reanalysis of a subordinating structure which presented the learning generations with a profile containing only one instance of the sentential specifier AUX (as depicted in 42)—evidently led first to a grammar in which coordination was at the two-bar level of structure, rather than at the maximal projection of phrasal categories. It is likely, however, that coordination at the maximal level is most natural (cf. the suggestion to this effect in George 1980). If so, it is to be expected that rule (21) would soon be joined by the more usual coordination at the maximal projection—as expressed in rule (20), repeated here for convenience:

$$(20) X''' \rightarrow X''' (\text{CONJ } X''')^*$$

If a development such as the one just outlined is at all reasonable, then we must address a question which quite naturally suggests itself regarding the Uto-Aztecan obviative element **-ku ~ -ko*, which did not reanalyze as a coordinating conjunction in the sense of CONJ in (20) and (21). Why, for example, didn't reanalysis of the obviative protasis construction give rise to structures defined by (20), with **-ku ~ -ko* representing the CONJ element? I suggest that the reason this theoretically possible reanalysis did not take place has to do precisely with the fact that **-ku ~ -ko* was obviative and therefore, in the common ancestral Tepiman stage, would regularly have been followed by the auxiliary of the main clause, as in the profile given in (32), repeated here:

$$(32) \quad \underbrace{\quad \text{protasis} \quad}_{(\dots V\text{-KU})_{V_m}} \quad \underbrace{\quad \text{main clause remainder} \quad}_{\text{AUX } (\dots V)_{V_{m-1}}}$$

Although, to be sure, it is not necessarily the case that this construction would reanalyze in any particular way, it was subject, so to speak, to the "ambiguity" according to which the **-ku ~ -ko* element was, ahistorically, associated morphologically with the following AUX rather than with the preceding V. I find it easy to imagine that this is what happened in fact—the early or pre-Tepiman **-ku ~ -ko-* was reanalyzed as a prefix *ku- ~ ko-* on the following auxiliary and came eventually, and quite naturally, to function as a clause introducer, much like the other auxiliary prefixes found in Tepiman synchronically. This reanalysis deprived **-ku ~ -ko* of the opportunity of undergoing the alternative reanalysis as a coordinating conjunction in Tepiman. I should emphasize, however, that I offer this suggestion with some reticence, since I have no detailed knowledge at all which would permit me to state with certainty that the Tepiman auxiliary is in fact a continuation of the Uto-Aztecan obviative suffix.

Assuming it is correct that only the Uto-Aztecan proximate suffixes had the opportunity to reanalyze in the way they evidently have in Papago, a number of questions remain concerning the details of their reanalysis as coordinate conjunctions. I concern myself with only two of these remaining questions, to wit: (1) Why did *(-)c*, and not *(-)k*, come to be the conjunction for nonverbal categories? (2) How did the alternant *kc* arise?

The answer to the first question is to be found in the morphophonological observation made earlier concerning the interaction between a perfective verb and the perfective-associated *(-)k*. Recall that the proximate conjunction may, and normally does, fuse onto the verb of the preceding clause where that is verb-final—harking back, no doubt, to its earlier suffixal status. Recall further that a perfective verb, when suffixed, fails to undergo the truncation process so characteristic of perfective forms in Tepiman (especially Papago). Since truncation is blocked by the proximate element *-k*, as with any other suffix, the surface forms of Papago sentences in which a perfective verb immediately precedes the proximate conjunction will regularly provide "audible" evidence of the suffixal nature of the conjunction. By contrast, the imperfective-associated element *(-)c* will not so regularly reveal its suffixal status, since its attachment to a preceding verb does not block a prominent morphophonological process.

We can assume with great certainty that the superficial formal state of affairs just described was essentially the same in the pre-Papago era when the pressures for reanalysis were making themselves felt. It seems quite reasonable to propose that *(-)c* (< **-tʃ*) underwent reanalysis before *(-)k* (< **ka*) did, the latter resisting reanalysis for a time by virtue of its all too evident suffixal status. If *(-)c* became a conjunction (i.e., CONJ in

20 and 21) before (-)k did, then it would be the former, rather than the latter, which would spread to nonverbal categories, assuming as I have here that generalization of the coordination rule would follow smartly on the heels of the initial reanalysis.

Given this scenario, it would not be surprising to find a language representing the suggested intermediate stage in its synchronic grammar—that is to say, a language in which -k (< *-ka) is clearly suffixal and in which the imperfective-associated counterpart has become the generalized coordinate conjunction. Sierra Pima may be such a language. It is certain, at least, that -k is consistently suffixal; it is never separated from the verb of the preceding clausal conjunct, and it consistently blocks the morphophonological processes which otherwise affect perfective verbs in that language. The situation with Sierra (-)(i)tʰ (< *-tʰ) is somewhat unclear. I have suggested earlier that it has been reanalyzed—to account for the palatalization. But it is not clear, in the case of verbal coordination, that it can be separated from the verb of the preceding clausal conjunct. My own notes are quite ambiguous on this matter in terms of my transcription of forms, and crucial test cases (e.g., with the verb nonfinal in the first of a pair of conjoined clauses) are simply missing from my data. However, there is positive evidence that this element has become a generalized coordinating conjunction in Sierra Pima, since it is used in nominal coordination, as illustrated in the following sentence:⁸

- (43) *Huán tʰ g Vení:t sʰi' mu'ĩ no:k.*
(John CONJ ART Benito very much speak)
'John and Benito talk a lot'.

The genesis of the Papago alternant *kc*⁹ is, I think, also illuminated by a consideration of the phenomenon of fusion discussed earlier in connection with the proximate conjunction. The imperfective-associated

⁸ The Ónavas Pima cognate -t evidently has not reanalyzed in this way, remaining firmly suffixal to verbs. Stephen Hale (personal communication) has given me the following Ónavas Pima form, elicited by him to obtain conjoined nominals in subject position:

'Aligʷil k kilí vɛ:m niok.
(youth ART:OBJ man with speak)

'The youth and the (older) man speak'. (Lit., 'The youth speaks with the (older) man'.)

This clearly involves the use of a postpositional construction, based in the comitative postposition *vɛ:m* (cf. the Papago adposition *wɛ:m*). This comitative construction may well function generally to express ideas for which the conjoined nominal construction would be used in Papago. More investigations must be made, however, since the above sentence is open to other interpretations with respect to its position within the total body of possible evidence on coordination of Ónavas Pima.

⁹ Sierra Pima evidently has an alternant *k(i)tʰ*, beside *(i)tʰ*, for its now autonomous conjunction. I do not control the details, however, since I have only heard (overheard) this

element (-)c may, it was noted, fuse onto a preceding clause-final verb; in its participial function, of course, it is necessarily fused onto the verb and, there, it represents a direct continuation of the original proximate suffix of Uto-Aztecan. When this element attaches to a stative predicator terminating in the segmental skeleton V(L)V, an increment -k- appears immediately preceding it, as exemplified in:

- (44) *'Ali 'o 'am wo'ö-k-c soak.*
(child AUX there lie-INCREMENT-CONJ cry)

'The child is lying there and crying'.

I suggest that this is the source of the *kc* alternant. The logic of reanalysis is quite straightforward. Consider, for example, the fused form *wo'ö-k-c* in the sentence just cited. Since the verb in the first verbal conjunct (i.e., *wo'ö*) would lack the -k- increment if not suffixed,¹⁰ the surface forms of the relevant stative sentences give the impression that the increment is dependent upon the suffix. It would not be surprising, therefore, if the increment were in fact associated with the proximate suffix itself by the learning generations faced with the actual surface forms. The proximate ending would, accordingly, appear to have two alternants, -k and -kc, either or both of which could assume the role of CONJ when the reanalysis under consideration here took place.

From the observed synchronic facts of Papago, it is evident that both alternants did indeed come to represent the new category CONJ. The original phonological correlation is only marginally evident now, in the speech of those who, in nominal coordination for instance, distribute *kc* and *c* in accordance with the phonological shape of the nominal preceding the conjunction—that is, *kc* after . . . V(L)V, and *c* otherwise.

alternant in connected discourse; it does not appear in my notes. It is possible that reanalysis in Sierra Pima proceeded in much the same way as in Papago, though the element -k, associated with perfective aspect, has not undergone reanalysis, if my data are to be trusted in this connection.

¹⁰ It should be mentioned that the increment -k(a)- may now, in modern Papago, appear unextended on stative verbs, as in:

'Ali 'at 'am o wo'ö-k.
(child AUX there FUT lie-INCREMENT)

'The child will lie (will be lying) there'.

Its presence would, therefore, appear not to be conditioned by the presence of a following suffix. This is true, synchronically; but it has evidently arisen through the development of an optional rule deleting the future imperfective ending -d(a), since the *k*-final form exemplified above can appear only where the same form extended by -d(a) is also possible:

'Ali 'at 'am o wo'ö-ka-d.

There is some evidence that the alternation between *c* and *kc* has assumed a new rationale in the synchronic grammar of Papago. I cannot yet speak with confidence on this matter, but it appears that the longer alternant is sometimes used to signal the circumstance in which an immediately preceding potential conjunct is not to be taken as coordinate with the constituent following the conjunction. If I am correct in this, the longer alternant (*kc*) will be used to signal the fact that the string A CONJ B is to be bracketed as . . . A] CONJ B. . . . That is to say, the longer alternant appears where a major syntactic break intervenes between the potential conjunct A and the following conjunction. By contrast, use of the shorter form *c* in an otherwise identical string would imply direct coordination of A and B.

This is all extremely tentative, but the issue deserves detailed study and may well prove to be of great importance in the investigation of discourse structure in Papago. It is almost certainly relevant to the study of uses of the conjunctions which go beyond what I have referred to as their "canonical" proximate coordinating function.

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