

UTO-AZTECAN IN THE LINGUISTIC STRATIGRAPHY OF MESOAMERICAN PREHISTORY

Karen Dakin

Universidad Nacional Autónoma de México, México, D.F.

0. *Introduction*

Linguistic stratigraphy in Mesoamerica has been the topic of much research in recent decades, and special attention has been given to loanwords, one of the few kinds of evidence available to help unravel the history of the region. The area has long been witness to a cultural mingling of diverse groups, and the identification of the linguistic results is an important issue here, as in other similar geographical areas.¹

Figure 1 below shows the present-day distribution of Uto-Aztecan languages in Mexico and Table 1, a conservative classification of the Uto-Aztecan family. As can be observed, there are four principal families still represented in Mesoamerica besides Uto-Aztecan: Mixe-Zoquean, Oto-Manguean, Mayan, and Totonacan-Tepehua, as well as two language isolates Purepecha (Tarascan) and Huave. One of the characteristics often noted about the distribution of Uto-Aztecan languages is that it is the only clearly identified family with languages spoken both north of Mexico and in Mesoamerica. In the southern area, Nahuatl especially has been in contact with a number of non-Uto-Aztecan languages. The historical issue of interest here involves Uto-Aztecan and Mesoamerica and is chronological: does the linguistic evidence suggest as the most reasonable interpretation that the Uto-Aztecan entered Mesoamerica as relative latecomers or does at least some evidence indicate

¹I want to express my thanks to CONACyT for partial support received from special project G34979H. Helpful suggestions and criticisms were received and appreciated, if not always heeded, from Mercedes Montes de Oca, Valentín Peralta, Richard Haly, Søren Wichmann, David Beck, Verónica Vázquez, John Carlson, Martha Macri, Sally McClendon, Gene Casad, and Lyle Campbell. The sources for data are included in the bibliography. For Mayan and Mixe-Zoquean cognate sets, most data comes from Wichmann (1995) and Dienhart (1997).

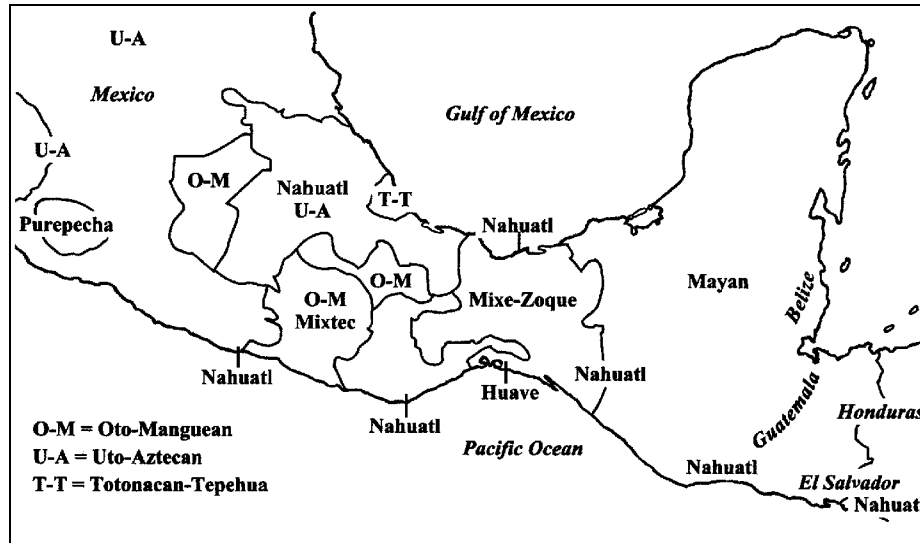


Figure 1: Present-day distribution of Uto-Aztecan languages in Mexico

that their arrival had to be at an earlier date. Most research has assumed, partly because of archeological and ethnohistorical evidence, that Uto-Aztecan languages came late into the cultural area known as Mesoamerica. The material basis for this belief is that there are no early cultural remains that it has been possible to tie up with Nahuatl speakers as a separate group.

As for linguistic evidence, Mesoamerican archeologists often cite Swadesh's glottochronological figures for the Uto-Aztecan diversification, figures which more or less match carbon-14 dating for sites identified through ethnohistorical records and settlement patterns with Nahuatl speakers, and which are therefore still accepted in spite of criticisms of the method. These figures place the diversification of the Uto-Aztecan family at 4500 to 4700 years ago, and within it, of Nahuatl at A.D. 600 (Swadesh 1954–1955, as cited by García de León 1976:41–53; Justeson et al. 1985).

1. *Uto-Aztecan word structure as an etymological tool*

However, there are other kinds of evidence that have been brought into reconstructing the linguistic and cultural history of contact among the groups involved. Two of these, the use of calques and loanwords, relate to how etymologies work for Uto-Aztecan. The existence of etymologies in a given language is often cited as one of the best ways to determine the origin of both calques and loanwords. The position taken in this paper is based on the hypothesis that compounding was the most important process in proto-Uto-

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- A. Northern Uto-Aztecan (generally considered a single branch, although some doubt still)
1. Numic
 - Western:* Mono (California), Northern Paiute (Idaho, Nevada, California, Oregon), Fort McDermitt, Nevada, Paviotso, Bannock.
 - Eastern:* Shoshoni, Big Smokey, Gosiute, Comanche, Panamint (Death Valley and Lone Pine, California; Beatty, Nevada)
 - Southern:* Ute Dialects: Ute, Southern Paiute, Chemehuevi; Kawaiisu
 2. Takic (*Serrano-Kitanemuk; Gabrielino-Fernandêo; Cupan* (Cahuilla-Cupêo: Luisêo))
 3. Tübatulabal – Kern River
 4. Hopi
- B. Southern Uto-Aztecan (Also still some doubt about existence of a single branch)
5. Tepiman
 - Pima-Pápagu:*
 - Pápagu (Tohono O'odham = Desert people): Totoguañ, Ko = Lloodi, Gigimai, Huuhu'ula
 - Pima (Akimil, O'Odham = River people): Salt River, Eastern Gila River, Western Gila River: Kobadt
 - Pima Bajo*
 - Tepehuan*
 - Northern Tepehuan: Baborigame (Principal dialect), Nabogame
 - Southern Tepehuan: Southeastern Tepehuan, Southwestern Tepehuan, Tepecano
 6. Tarahumara-Guarijío
 - Tarahumara:* Western Tarahumara, Eastern Tarahumara
 - Guarijío:* Highland Guarijío, Lowland Guarijío
 7. Cahita (Yaqui-Mayo): *Yaqui, Tehueco* (Buelna), *Mayo of Sonora* (Valley and Sierra), *Mayo of Sinaloa* (Copomoa)
 8. Eudeve-Ópata: *Ópata, Eudeve*
 9. Tubar
 10. Corachol
 - Huichol*
 - Cora:* Jesús María (Mariteco), La Mesa del Nayar (Meseño), Presidio (Presideño), Sta. Teresa (Tereseño), Corapan (Corapeño), Gavilán (Gavileño)
 11. Náhuatl (Historical classification)
 - Eastern Nahuatl:* La Huasteca, Guerrero Central, Sierra of Puebla, Tehuacán-Zongolican, Isthmus, Pipil
 - Western Nahuatl:* Central Nahuatl: “Classical” Nahuatl, Nahuatl of the center (D.F., Morelos, Tlaxcala, State of México (Tetzoco, etc.)), North Puebla Nahuatl, Nahuatl of the Western periphery: Colima-Durango, Northern State of Mexico [Almomoloya, Sultepec], Jalisco-Nayarit, Michoacán, North Guerrero, Pochutec
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Table 1: Uto-Aztecan languages

Aztec word creation. Previous analyses of Uto-Aztecan languages have commented on such word creation in the family. It is one of the tasks to which Langacker (1977:71) called attention, pointing out that it very possibly could be reconstructed for proto-Uto-Aztecan:

Uto-Aztecan languages differ considerably in the degree to which they employ compounding. The range is from languages that hardly employ it at all and show a

limited number of patterns to those in which compounding is a major if not predominant lexical phenomenon showing many patterns. To determine with assurance the status of compounding in the proto-language, it will be necessary to go beyond the evidence provided by current compounds in the daughter languages and find a substantial inventory of older compounds, no longer recognizable as such, through internal and comparative reconstruction of stems. However, it is fair to assume provisionally that the most widespread contemporary Uto-Aztecan compounding patterns probably reflect at least approximately the range of major patterns found in proto-Uto-Aztecan.

Since Langacker's comment, research by a number of linguists has helped to clarify or identify some of the processes that have affected proto-Uto-Aztecan forms in different languages. In several previous papers I have reconstructed a number of Uto-Aztecan compounds of the type that Langacker described above as "older compounds, no longer recognizable as such, through internal and comparative reconstruction of stems". In doing so, I argue that it is possible to identify a number of *CV*- root morphemes as the basic substance of those processes; in addition, compounding order for heads and modifiers is relatively fixed. A number of proto-Uto-Aztecan **CV* morphemes have long been recognized by linguists as identifiable units. For example, a number of noun and verb roots that are monosyllabic, although they have suffixes of one kind or another, are commonly reconstructed, such as **ti* "rock", **ma* "hand" and **pa* "water". In addition, a number of these same monosyllables are the 'instrumental prefixes' found as productive elements in Numic, apparently semi-productive in Takic, Hopi, and Tübatulabal, and as relics in more southern languages.² Paradigmatic analyses of the Uto-Aztecan lexicon provide evidence that even many of the more conservatively identified *CVCV* root morphemes also derive historically from compounding of smaller *CV* roots.³ The resulting lexical paradigms also reflect semantic categories that are often reflected in cultural history as well, for example, terms for technology and the salient animals. Evidence for the identification of the *CV*- roots comes from sifting through the lexicon of each language to identify shared elements and then comparing possibilities across the family.

²For example, see grammars of Numic languages by Dayley (1988), Nichols (1972), and Sapir (1930), as well as Kaufman (1981) and Langacker (1977).

³Several schemes for proto-Uto-Aztecan morpheme structures have been proposed in analyses; most recognize *CV*, *CVCV*, *CV:CV^{-FF}*, *CVhCV^{-FF}*, and *CVCCV^{-FF}*, (FF is 'final feature'), although the nature of the medial clusters is debated. See Whorf (1935), Voegelin, Voegelin & Hale (1962), Kaufman (1981), Munro (1977), and Manaster-Ramer (1992, 1993) for their descriptions.

Further proof for the analysis of bisyllabic and polysyllabic words as old compounds and derived words in the family may be drawn from the much discussed ‘final features’ of the Numic and Tübatulabal Uto-Aztecan languages; cf. Sapir (1913:449–453), Voegelin, Voegelin & Hale (1962:83), Langacker (1977:23), I. Miller (1982:444–449), Kaufman (1981:104–156), and Manaster-Ramer (1991ab, 1992b, 1993). The final features, found most clearly in the Numic branch, but which seem to operate to a lesser degree in other northern members of the family, cause the initial consonant of a following morpheme to appear as nasalized, lenited, or geminated. For southern languages, there are conflicting analyses, but a contrast for **p* of lenited (or simple) **p* vs. fortis (or geminated) **p* is clearly present. Voegelin, Voegelin & Hale (1962:141–144) reconstructed these three contrasts essentially as vowel-features in proto-Uto-Aztecan **CVCV* forms. The fact that variation exists in Numic languages, however, makes reconstruction of final features for Uto-Aztecan difficult (cf. I. Miller 1982), since certain roots are found as both nasalizing and geminating or leniting even within one language. Another problem is that in certain cases, there is some indication that it is the following morpheme that has an initial feature, rather than a preceding final feature (Pam Munro, p.c. 1995).

Such variation suggests phonological reduction from longer forms. Sapir (1913:449–453) identifies several cases of nasalized consonants that are the result of vowel loss between an original nasal and a stopped consonant, assimilation to the nasal of a stem, or reduplication. Elsewhere I have suggested that it may be possible to trace some cases of nasal features to following grammatical (or perhaps root) morphemes that have been reduced phonologically in northern languages while being retained in more conservative southern languages. For example, in Guarijío, Tarahumara, Eudeve, and Cora there is a *-ra* morpheme that is attached to the possessed noun, and it is cognate to a final feature *-n* that appears in possessed nouns in Numic languages. Sapir leaves the problem of geminate consonants pending. In the work cited above, Manaster-Ramer has argued, principally on the basis of Tübatulabal correspondences, that for certain morphemes the final features actually derive from several different consonant clusters.

Finally, the different branches of Uto-Aztecan have undergone other phonological changes such as fusion and loss of vowels and consonants that quite disguise the original older compounds, so that it is also necessary to trace them back through rules of regular sound change. As would be expected, the various kinds of phonological reduction that have affected Uto-Aztecan languages have resulted in cases of probable homophony. These seem evident when there is no clear underlying semantic relation between forms with a

given possible *CV- root. For that reason, all forms with reflexes of particular *CV sequences must be sorted into possible sets before proposing etymologies such as those in this paper.

The preceding brief discussion of the historical development of word structure in Uto-Aztecan is provided as a basis for the arguments to follow that the words discussed here are Uto-Aztecan and have reasonable etymologies. Since the Nahuatl etymologies described go back to very old phenomena in proto-Uto-Aztecan, if they are correct, they would indicate a deep chronology for the words in the linguistic family. As a result, in the case of loanwords found in different language families, the etymologies function as evidence that Uto-Aztecan languages must be the source of those words, and that the presence of Uto-Aztecan earlier in Mesoamerica should be considered. Alternative proposals need also to relate the loanwords to the structure of the lexicons of other language families in order to counter these arguments.

2. *Calques and vultures*

The first kind of contact phenomenon to be considered is the presence of Mesoamerican calques. A large number of these have been examined in detail by Thomas Smith-Stark (1982, 1994) and also were included in Campbell, Kaufman & Smith-Stark (1986). Old calques that are shared by a number of languages are especially good evidence for relatively early contact with the language that is the source of the calques. Again, the first task is how to identify that language. Hock (1988:400) notes that calquing presupposes a certain familiarity with the donor language and its grammatical structure because otherwise it would not be possible to recognize that a given item in that language is morphologically complex. For his detailed 1982 paper (published in 1994), Smith-Stark gathered data on a number of calqued expressions in Mesoamerican languages. However, he was fairly conservative in what he chose to identify as calques, limiting himself principally to phrases and other more transparent constructions such as “door” = “mouth of house” or “thumb” = “mother of hand”, for which it is difficult to specify a relative chronology. In the joint paper by Campbell, Kaufman & Smith-Stark (1986) in which they use the calques as a characteristic of Mesoamerica as a linguistic area, the authors do not take a position regarding the languages of origin of the identified calques.

However, if Nahuatl is the source of calques that in Nahuatl are like the very old Uto-Aztecan compounds described in the introduction, then there may be evidence for a deeper chronology in Mesoamerica. Two forms will be discussed here, and only one could be definitely assigned an older Uto-Aztecan

origin. They are the words for “vulture” and “precious metal”; both relate to terms for “excrement” or “filth”.

The Nahuatl word *co[h]pi:lo:-tl*⁴ “buzzard” is more integrated into the derivational system of the language than most of the phrases treated by Smith-Stark. A dialectal variant for “buzzard” found in central Guerrero dialects is *cohma*. At the same time the possible calque is a recognizable compound in Ch’ol and Chontal and perhaps other Lowland Mayan languages. Justeson et al. (1985:13) point out that the Lowland Mayan ancestral form for “vulture” was **ta:’hol* as in Ch’ol *ta’-hol*, which they gloss as *ta’* “excrement” + *hol* “head”, suggesting that the name is motivated by the belief that vultures eat carrion by entry through the anus, a behavior that produced folkloristic associations of the vulture with excrement. It is important to note that this word cannot be reconstructed for proto-Mayan, as can be seen from the variety of unrelated forms included in Dienhart (1997): Huastec *t’ot, to’t*; Lacandon, Yucatec, Itzá, Mopan *č’om*, Chortí *usix*, Ch’ol (*s*)*t’a’xol, usix*, Chontal *maa’*, Tzeltal *os*, Tzotzil *šulem, tararan*, Tojolobal *usex, usëx*, Chuj *ostok, usex*, Jakalteco *usmix*, Akateco *mix*, Q’anjob’al *ostók, šulém*, Motocintleco *six*, Teco, Mam *loš*, Aguacatec, Ixil *qu’s*; variants of *k’uč* are found in Kaqchikel, Tzutujil, K’iche, and Uspanteko, Pokomam, and Pokomchí and of *sosol* in Q’eqchí.

The associations between “head” and “filth” are plentiful in southern Mesoamerica. In her study of birds in Mayan sources, de la Garza (1995: 87–89) points out that on p. 19 of the Mayan *Paris Codex*, a vulture is eating a dead man by pulling his intestines out through the eye, while on p. 3 of the *Dresden Codex* one finds represented “a human sacrifice by extraction of the head; from the victim’s chest grows a tree, in which a vulture is perched which has in its beak the victim’s eye, joined to the eye socket by an intestine” [my translation; KD].

Another instance of the relation between “anus” and “vulture” is found in a Sierra Popoluca folktale collected by Wichmann (2002). Sierra Popoluca is a modern Zoquean language spoken in the Isthmus of Veracruz. In the story, an angel turns those who survive a great flood upside down and converts them into vultures. The storyteller explains that for that reason “the head of the vulture is like the anus”, and quotes the angel as telling them: “You are going to collect everything that comes out where people shit.”

For Papago, a Tepiman Uto-Aztecan language of Arizona, Mathiot (1986) records two variants of the name for a mythological buzzard, *‘Uam*

⁴The final *-tl, -tli, -li,* and *-in,* suffixes that appear on Nahuatl nouns cited here, are absolutive suffixes that indicate an unpossessed, non-pluralized noun and are not part of the base.

Ñuv̄i and *S'uam Ñuv̄i* “Yellow Buzzard”, where “yellow” refers to the stench of excrement, and *Ñuv̄i* is “turkey buzzard”.

These associations are also reflected in one of the possible etymologies for the Nahuatl term *co[h]-pi:-lo:-tl* “the one with a face of filth”, which would derive the name from a compound of two root morphemes. The first root is **co*'. Miller (1987) distinguishes eighteen different sets of *co*- cognate forms, but four show different correspondences and can be filtered out, and the remaining fourteen sorted into four semantic sets. The sets of interest can be glossed as “oil-like secretion, excrement, filth, waste”. The second root in the “buzzard” word is **pu*- “face, eye” (Miller 1967, no. 160b). In this case, Miller (1987) distinguishes twenty-three different **pu*- sets, but six refer to “face, eye”, one seems to be a different set of correspondences, and the remaining sixteen can be sorted into perhaps four semantic groups. The last part of the “buzzard” word is the **-ra'aw̄i* “possessed characteristic”. Evidence for segmenting the word follows below.

2.1 Nahuatl **co*-.

Nahuatl: *co*- appears as an independent noun *co:-tl* “filth”, given as a variant of *co[:]-k^witla-tl*, both glossed as “*sudor espeso del cuerpo* [thick body sweat]” in the sixteenth-century dictionary by Molina, and in such productive compounds as *oko-co:-tl* “pine resin” (*oko-tl* “pine”); *co-yo:ni* “to fry (in juice or oil)”, and in derived forms such as *co-ka-tl* “wart”.

Numic: Kawaiisu⁵ *co-ko-ponoho-r̄i* “body odor”, which can be compared with the compound *co-ko-vi'i* “testicles” and possibly also with *wi-co:-mi* “semen”. Panamint *po-co'in* “sweat” < **po*- “vapor” + **co*'-.

Takic: Cahuilla *yú(u)-liš* “clay, mud”,⁶ *yú-lil* “incense cedar”. Luiseño *yúu* “be wet” *yú-n̄i'i* “make wet, baste, sprinkle”, *yúu-ča/i* “repeatedly dip in

⁵Sources for Uto-Aztecan languages, when not otherwise noted, are as follows: Numic: Panamint (Dayley 1989), Southern Paiute (Sapir 1931); Takic: Kawaiisu (Zigmond et al. 1991), Cahuilla (Seiler & Hioki 1979), Kitanemuk (Anderton 1988), Luiseño (Elliott 2000); Hopi (Hill et al. 1998); Tepiman: Papago (Mathiot 1986); Yaqui-Mayo: Yaquí (Estrada et al. 2002); Tarahumara-Guarijío: Tarahumara (Brambila 1980, Hilton 1993), Guarijío (Miller 1996); Eudeve-Opata. Eudeve (Lionnet 1986); Tubar (Lionnet 1978); Corachol: Cora (Ortega 1737, McMahon 1959); Huichol (Grimes et al. 1981); Nahuatl (Molina 1571, Canger 1980, Lastra 1985, R. Joe Campbell 2000).

⁶Manaster-Ramer (1992) and Kaufman (1981:37–41) identified a **c* > *y* /V__V change as an innovation in Northern Uto-Aztecan languages. It would appear that in Takic languages **c* also went to **y* in word initial position before /o/, raising the /o/ to /u/. The correspondence can be seen in the following Nahuatl and Luiseño pairs: **co*- “hair” > *co-n-tli* and *yúu-la* “hair (on head)”, *copa* and *yúpa* “to go out”, *-h-co-ma* “to sew”, and *yú-la* “to thread a needle”, and **co*- “secretion” > *co-yo:-nia* and *yuu-ča* “to fry in oil”. Unlike the more general change of **c* > *y* in

water, fry in oil” (cf. Nahuatl *coyo:ni* above); *yu-xwáa-la* “mud”. Kitanemuk *yu-vea’* “fry something”.

Hopi: *cō-lō(k)* “drip (in a single droplet)”; *cō-qa* “mud, wet clay, mortar”.

Tarahumara-Guarijío. Tarahumara: Brambila (1980) identifies as “blackness” a root *čō* that appears with various derivations such as *čō-ntima* “to dirty, blacken”, and Hilton has *čō-na-mi* “dirty, dark” and *čō-ré* “resin”; *čō’-ri* “to be sticky”, and *čō’-rowa* “dirt”; at the same time Brambila identifies a second root *čō* “viscosity” as in *čō-pé* “pine with resin” and, more clearly, *čō’-pé* “cold (runny-nose)”; the two roots would seem to be related, but the alternation between /Ø/ and /’/ needs to be explained. Also possibly *wi-čō-ri*, cognate with Guarijío *weh-čō-ri* “clay”, since *weh-* is probably a reflex of **kʷi* “earth”. According to Miller (1996), a kind of copal incense among the Guarijío is known as *temó-čō-ri*, which is secreted by an insect known as ‘*huitachi*’. The *-co-* element may be a reflex of **co-* “secretion”.

Corachol: Cora «*huataútzū’umeejpe*» (McMahon 1959:35) interpreted phonemically as /wa-taw-co’o-meeh-pe/ “to blow (nose)”. Ortega’s eighteenth-century Cora vocabulary includes the following terms with *co-* “waste, filth, excrement”: /cō-me-t/ «*Tzumet*» “snot”, “gum”, «*Tzûmet*» “phlegm”; /a-cōh-pwa-ri-ti/ «*Atzupuariti*» “to sneeze”; /ke-cōh-ta/ «*Ketzûhta*» “to smoke (food, etc.)”; /a-cō-pe/ «*Atzupe. Neti.*» “*escarmenar*, to shell (beans)” (*-pe* “to peel; peel”); also possibly /cō-te/ «*Tzute. Neti.*» “to bewitch” and /cōh-ča/ «*Tzuhchà. Ne.*» “to be numb”.

2.1.1 *Other pUA *co- roots.*⁷ There are at least two other homophonous **co-* roots that can be reconstructed in Uto-Aztecan.

**co-* “long stick”. Nahuatl *co-cō-pas-tli* “weaving stick”, *cō-cō-na* “to beat (drums, people)”. Possibly: Cora (Ortega): /ao-cō’-ni-te/ «*Autzûnite. Nete.*» “to chase away”; Yaqui *čō-na* “to hit with the fist”; and Tarahumara *čō’ná* “to hit with the fist”.

**co-m-* “hair, head”. Nahuatl *cōn-tli* “head” and the transitive verb *cō-pa* “to conclude, to extinguish (fire)” (in Nahuatl, and probably in Uto-Aztecan, the top of the body, or head, is associated with endings, while the lower part is associated with beginnings, as in *ci[:]n-ti* “it begins”.) Panamint *cō-*

intervocalic position, the word initial change of **co > yu* appears to be limited to Takic languages only. The Numic language Kawaiisu and Hopi both retain **co-* along with the southern languages (Dakin, in preparation).

⁷The following abbreviations are used in this paper: pMZ (proto-Mixe-Zoquean), pOM (proto-Oto-Manguan), pUA (proto-Uto-Aztecan), pZap (proto-Zapotecan).

“pertaining to the head (instrumental prefix)”. Southern Paiute *c̥o-s* “head (instrumental prefix)”.

2.2 **pu* / **pi* “face, eye”

In Nahuatl non-initial **p* is reflected as *p* and in limited cases intervocally as *w*; initial **p* has three reflexes, \emptyset , *h-*, and *p-* depending on various factors (cf. Dakin 1990, 2000); **u* > *i* after **p*. The \emptyset reflex of **p* is found in **pu-si* “eye” > *i:š-*, as compared with Yaqui *puusim* and Huichol *hiší*, but the *pi-* reflex is also found, for example, in *pina:wi* “to be ashamed, to turn red in the face”. Although the longer form **pusi* can be reconstructed as “eye”, the **si* can be separated and identified as “pair, twins”, so that a literal meaning would be “pair in the face”, with **pu* segmented apart as “face” (cf. Dakin MS.a). Other cognates in which **pu* is found include Yaqui *puh-ba* “face”, Huichol *hi-tia*, and Nahuatl [*i*]h-*sa* “to wake”, Hopi *po-ni-niyki* and Panamint *ti-pu-nih* “to wake up”, possibly cognate with Nahuatl [*i*]h-*ta* “to see”.

Besides **pu*, the other possible Uto-Aztec reconstruction for Nahuatl *pi* is **pi*, so that the word could be **c̥o-pi-ra'a-wi* in which the element **pi* could perhaps be a nominalized form of the transitive verb *pi* “to pull out, as a plant by the roots”, or the nominal root of *pi-li-wi* “to hang”. A third Uto-Aztec reconstruction based on the correspondences with Tepiman **nupi* would have to be pUA **pi*, which could possibly give *pi-* in Nahuatl. It is possible that the Papago form may reflect morphophonemic changes in the vowels. **nui* is reconstructed by Bascom (1965:#175) for “buzzard” in Tepiman languages.

2.3 **ra'a-wi* or **ra-wi*

The Nahuatl nouns ending in *-lo:-tl* belong to a derivational class in Uto-Aztec in which the suffix reconstructs to a pUA **ra'a-wi* suffix with the meaning “entity characterized by X”, X being the root (cf. Dakin 2001).

2.3.1 Full cognates for “buzzard”. No clear full cognates for *co[h]pi:lo:-tl* have been found in other Uto-Aztec languages, but there are two possibilities.

Luiseno *yur̥a-pi-* : *yur̥ávi-sh* “vulture, turkey buzzard”; this term is also the name of a constellation described as follows: “these are the ones who peered down, the badger and the vulture, long ago” (Elliott 2000:1151) < **co-* “secretion, waste”, *-ŋa-* “unidentified element” and *pi-š* “unidentified element”.

Panamint *co-a-pit-tsi* “ghost, spirit, devil, whirlwind” < **co-a-pi'*- + SUFFIX although the *-a-* here is an unidentified element also. Both are problematic because of the unidentified elements.

Kitanemuk *yu-pi-vu'* is the name of a linnet-like bird species with a black face (Anderton 1988:593). *yu* is apparently a reflex of **co*, **pi* may be either the Kitanemuk root for “peck” or “down (feathers)”, and *vu'*, of **pu* “face”.

The Cholan calque **hol* occurs in the lexicon with the principal meaning “head”, especially in compounds, but there are also derived words from an apparently homophonous verbal root with the meaning “drag” or “hang”.

Other Ch'ol *ta'* “excrement” compounds or idioms include *u ta' miiš* “sweepings” < “excrement-broom”, *ta' 'ič* gummy secretion of the eyes”; *ta' ni'* “snot” < “excrement nose”; *ta' šikin* “earwax” < “excrement ear”. The last referent is also found in a **co-* compound in Uto-Aztecan, as in the *yú-* in Cahuilla *yú-vis-'a* “earwax”; *yú* appears to be a cognate of **co-*, while the *-a* is a possessive suffix. The *-vis (pis)* may be related to *pisa* “to come out”.

There are other possible etymologies for the Nahuatl *copi-* combination. Two verbs exist with *cop* in Nahuatl: an intransitive verb *copi* “to end” and a transitive verb *copi:nia* “to peck, stab, lance”. The first can be paired with *cin-ti* “to begin”, based on the root for “base, lower part of body”, so that the *co-* element probably reflects the homophonous root **co-* “head, hair of the head” (Miller 1967:219a) rather than “filth”. However, it seems that *copi:nia* may be derived from *co[h]pi:-lo:-tl*, since some members of the *-nia* verb class in Nahuatl do appear to derive from nominal roots (cf. Canger 1980, Appendix). For example, *-mekal:]nia* means “to hang” and is derived from *meka-tl* “rope”. Following this pattern, the sense “to stab, lance” may more literally have meant “to peck, tear apart as vultures do”. These derivations need to be distinguished from other *-nia* transitive verbs that are derived from the intransitive class that ends in *-ni*. Papago has a cognate verb *š'o'opi-g* “to remove the mites from object's hair”, which would support **co[h]pi-*.

3. *Sacred excrement, precious metal*

A second instance of an important calque is that of “gold” as “god-excrement”, pointed out by Kaufman & Norman (1988:131): Lowland Mayan **ta'k'in* “metal”, which occurs in Cholan, Yucatec, and Tzotzil-Tzeltal languages, is derived from **taa'* “excrement” + proto-Mayan **q'ii'* “day, sun”, while in Nahuatl it is *teo:-k^witla-tl* “sacred-excrement”, derived from “sacred” and pUA **k^wita*, “excrement”, a term which seems to be limited to the more soil-like quality of excrement.

Here the direction of influence is difficult to specify on the basis of structure alone, since the loans are limited to western Mayan languages and the

Nahuatl areas in central Mexico. The Nahuatl word represents the same kind of productive compounding that is used to create words such as *co-k^witla-tl* “sweat”, mentioned above. Campbell, Kaufman & Smith-Stark (1986:554) believe the calque “sacred excrement” to be “clearly M[eso]A[merican] and not the result of accident.”

However, shooting stars are known in Southern Paiute, from the Numic branch of northern Uto-Aztecan, as *po:tsi-γwitcap:i* “star excrement”. Similarly “obsidian”, believed to have come from falling stars, is known in the Spanish of towns in Morelos where Nahuatl used to be spoken as “star excrement”. This is the same metaphor used in Lowland Mayan languages for “obsidian”, as for instance in Ch’ol *ta’ ec’* (“falling star”; so Aulie & Aulie 1999:113). These similar metaphors would seem to indicate a long period of contact between a Uto-Aztecan tradition, represented by Nahuatl, or possibly even some other Uto-Aztecan language, and the Lowland Mayan languages.

4. *Loanword evidence*

Loanwords, the second kind of evidence for contact, have been used to argue, for instance, both that it was a Mixe-Zoquean group that is responsible for the Olmec culture, the first group identified with Mesoamerican cultural traits (Campbell & Kaufman 1978:80–88, Justeson et al. 1985:23), and the countersuggestion, that Nahuas were also involved at an early date (Dakin & Wichmann 2000, Macri & Loooper MS). Loanword evidence has been assembled also to show that Totonacans were another important group (Justeson et al. 1985:26–27). In the existing literature, there have been only a few loans postulated as coming from the Oto-Manguean languages (Kaufman 1971, Campbell & Kaufman 1976, Justeson et al. 1985:21–22, Smith-Stark 1994), but this may be due to the fact that the interest in identifying such words is relatively recent, or because these languages have more complex morphophonemic systems and are tonal, factors which make it harder to identify earlier loans. They are one of the most important early groups in the area culturally, so that further research may offer new results. However, some of the existing proposals of words borrowed into Oto-Manguean made by Campbell & Kaufman have been questioned (Suárez 1985, Wichmann 1999).

As far as Uto-Aztecan goes, other problems are found. The situation is difficult in terms of chronology because Nahuatl loanwords are found in most Mesoamerican languages as well as in Spanish and other European languages. These loanwords are usually considered to be late words that came in either with the end of Teotihuacan or much later, with the arrival of the Spanish and their continuing the pre-Hispanic use of Nahuatl as a lingua franca. For all these reasons, clarifying the linguistic stratigraphy is one of the principal

problems in dealing with loanwords in Mesoamerica. The language of origin for the loans needs to be identified carefully before we can solve the chronological question of whether early and late loans can be distinguished phonologically or by other means. Suárez, for example, noting that the judgements made in analysing loanwords should be just as critical as those made in determining actual cognates, shows that the terms for “tortilla” that Campbell & Kaufman (1976:85) proposed as loans into Oto-Manguean languages actually can be reconstructed within Oto-Manguean itself.

However, one of the nicest kind of evidence for dating loans is that which Justeson et al. (1985:12–20) were able to use to order Cholan loans to Yucatec, since some pre-date the phonological innovation of proto-Mayan **t > č* in Cholan. However, none of the cases they cite concern possible Nahuatl loans. In the case of loans from this language to other languages, it is difficult to use phonological innovations except to the extent of seeking to identify dialect features, as Campbell (1977:103–109) does, for example, for words borrowed into K'iché. Finally, in some cases, there are diverse materials inscribed with glyphs from the epi-Olmec, Mayan, and Zapotecan areas that can be used to date particular lexical items and in a few cases already have been so utilized (cf. Dakin & Wichmann 2000). In addition, there is written or iconographic evidence from Teotihuacan, where the earliest central civilization developed that may be tentatively identified with specific languages or subfamilies of languages.

4.1 *Loanwords with Uto-Aztecan etymologies*

The rest of this paper will be limited to offering Uto-Aztecan etymologies and discussing possible chronologies for certain words found diffused in Mesoamerica and the Uto-Aztecan area outside Mesoamerica, and used in the calendars and to refer to culturally salient animals. Referents for the names include a number of birds (hummingbirds, quetzals, eagles, hawks, owls, and vultures), rabbits, armadillos, alligators, monster snakes, and scorpions.

In some cases previous analyses are questioned because they have proposed certain words to be loans from non-Uto-Aztecan languages, and suggestions are made that Nahuatl or an earlier Uto-Aztecan language is responsible for creating the words. Principal grounds for assigning the words to Uto-Aztecan instead are that, as noted above, they fit into paradigms showing derivational processes and phonological changes that can now be reconstructed to the proto-language. A number of loanwords found in several different Mesoamerican language families fit well into the Uto-Aztecan patterns, and at the same time there are no convincing etymologies for them in

the languages to which they have been otherwise attributed. It is important to emphasize that especially with respect to these words, for which sources such as Mixe-Zoquean or Totonac have been proposed, if the dating of the diffusion of the loans in those studies is correct, then that same logic would place Uto-Aztecs in Mesoamerica, in particular in southern Mesoamerica, at a much earlier date than has been accepted. In other cases, the loans have always been considered to be from Nahuatl, but no phonological clues to the dates for such incorporation can be clearly identified. Campbell notes Nahuatl loans into K'iché and attributes them to later Gulf coast influence. The problem is that certain features, such as the change of **k^wa* > *ko*, which Campbell cites, are not as limited areally as he was able to infer from the materials he had available. For that reason, the variant is not an absolute diagnostic. For example, [ko] and [bo] reflexes of **k^wa* are found also in more central areas of Puebla and Morelos, while [k^wa] is found in the Isthmus as well (cf. Monzón & Seneth 1984, Lastra 1985). Other features cited by Campbell include a change of *iwi* to *i*, since Nahuatl loans to K'ichean do not have the *-wi*. However, the case that he cites, «*xilinti*» (Zuñiga, ca. 1608, Pocomchí) “with upper lip split” (1976:107), would not correspond to a *-iwi-* morphologically. Although the *-ti* may come from *te:n-tli* as he suggests, it seems unlikely since the usual constructions with adjectives and body parts order the body part first, as in the form found in Molina «*tenxintinqui. Deshilada orilla de vestidura*», i.e. **te:n-šiti:n-ki* “frayed at the edge”, from *te:n-* “lip” and *šiti:ni* “to fray”. In addition, some Gulf coast dialects do have *iwi*. It seems likely that the Mayan languages simply adapted the loans to their morphology and phonology. In «*xit*» from *šiwitl* “jadeite”, because the principal stress in Nahuatl falls on the penultimate syllable, in this case *ši-*, and Mayan stress generally is word final, the last syllable dropped out.

The historical contacts between K'ichés and Nahuatl speakers during the post-classic period would represent a clear possibility for the incorporation of Nahua loans, but it would also seem that there is no linguistic evidence that would prevent giving that diffusion a still earlier date.

It should be said that it is less difficult to accept such a proposal if one considers recent suggestions that there are corroborative archeological findings tying proto-Uto-Aztecs to cultivation as well as to hunting and gathering societies. J. Hill (2001) has reconstructed some agricultural terms, including a few pertaining to irrigation, for proto-Uto-Aztecan. Although her initial comparative evidence is limited, it is enough to suggest that the search can be a fruitful one. A more southerly origin is not contradicted by ethnobotanical data. In countering theories for a northern California dispersal point, Catherine Fowler (1983:234) used such data to argue for a diversification point south of

the 36° 30' northern latitude boundary. Hill points out that the habitat reconstructed by Fowler could be further south, although not further north. In other words, they are suggesting, at least indirectly, that Uto-Aztecs probably had a point of origin in the northern part of Mesoamerica, and that they went on a backward migration up into California, the greater Southwest, and the Great Basin. Hill cites Bellwood who proposed a more southerly origin attributing cultivation to the Uto-Aztecs, with migration north based in part on an archeological model of 'leapfrogging' along rivers.

Returning to the loanword evidence for Mesoamerica, then, those who have argued for loans into Uto-Aztec languages have cited the fact that Uto-Aztecs came from non-tropical climates, and that therefore they would not know such flora and fauna as *cacao*, silk-cotton trees, and quetzal birds. However, one slight possibility is that some changes in flora and fauna may be more recent. Amadeo Rea, for instance, points out that biological historians have shown that there have been major climatic changes documented in the Southwest. For example, he notes that in the nineteenth century, when trappers sought furs for beaver coats in style at the time, they managed to reduce the beaver population so much that beaver dams no longer functioned to conserve water in the Gila River Valley. It may be the case that certain tropical plants originally had a distribution that extended farther north in Mesoamerica. A second more important point is that it is commonly known that the alternative strategy to borrowing existing words is to invent new ones using the derivational processes of the language. In at least some cases, Nahuatl terms for tropical flora and fauna have etymologies reflecting Uto-Aztec derivational creativity; for example, the name of the silk-cotton tree is *počo:-tl* in Nahuatl, a word which fits into the derivational paradigm of words "entity having X notable feature" described for *cohpiło:-tl*. In this case, the roots are **po-* "fluffy" and **ci-* "twigs" and refer to the fluffiness of the fruit of that tree (Dakin 2001)⁸. In Amanalco Nahuatl, for example, according to Valentin Peralta, *po:poči:ni* refers to the action of washing clothes against rocks so hard that the fibers are broken and become cotton-like. Although the word is found in Totonac as *pú:ču:t*, the at first glance aberrant initial *p* in Nahuatl can be

⁸kapok Pronounced As: kapok, kapək, name for a tropical tree of the family Bombacaceae (bombax family) and for the fiber (floss) obtained from the seeds in the ripened pods. The floss has been important in commerce since the 1890s; the chief source is *Ceiba pentandra*, the kapok (or silk-cotton) tree, cultivated in Java, Sri Lanka, the Philippines, and other parts of East Asia and in Africa, where it was introduced from its native tropical America. The floss is removed by hand from the pods, dried, freed from seeds and dust, and baled for export. The lustrous, yellowish floss is light, fluffy, resilient, and resistant to water and decay" (The Columbia Electronic Encyclopedia, s.v.).

explained as the result of a lost initial syllable **ka*. In Tarahumara a similar cottony fruit is known as *kapoči*, and one finds the verb *kapočini* “to burst open (of budding fruits on trees)”. In Guarijío *wah-kapi* is the word for a kind of silk-cotton tree, while another term *wah-kapori* is translated as “*guacapor*”, but may be another variety of the same species. It is even possible that the loss of the *ka*- syllable was fairly late, since the form *kapok* is found in European languages, and the tree is cultivated in the Philippines and Indonesia, where it was introduced by the Spanish from Mexico in the late sixteenth and early seventeenth centuries.

It will be argued here that for many of the words treated as loans from other Mesoamerican languages, reconstruction is possible within Uto-Aztecán, and valid etymologies exhibiting the same kind of regular derivational patterns and semantic consistency can be provided.

The words discussed below refer to entities present in Mesoamerican culture, in ritual as well as in everyday interaction. In such cases, the sharing of etymologically related terms in myth variants is considered evidence for an inherited tradition within Uto-Aztecán and consequently gives us additional reason to consider that family as a probable source.

4.2 *Mesoamerican terms possibly coming from Nahuatl or more generally from Uto-Aztecán.*

Given the importance of the ritual calendar, a day name from another language would indicate important cultural ties. The first two words possibly borrowed from Nahuatl refer to the same day in Mayan calendars, while the rest of the terms refer to animals and plants that are important in Mesoamerica.

4.2.1 *pUA *tapuči “rabbit”, Nahuatl to:čín “rabbit”, borrowed into Q’anjob’al as toš “name of eighth day”.* The present-day Q’anjob’al Mayan calendar includes *toš*, which seems very clearly to have been borrowed from the Nahuatl day name.

The same borrowing is mentioned in Campbell (1977:108), used for “armadillo”, which is *ayo:to:čín* in most Nahuatl dialects. The context makes one think that armadillos were classified as a kind of rabbit in the system. *to:čín* is the generic term, and *ayo:-* serves as a modifier—“the *točín* that has a shell on its back”. The proto-Uto-Aztecán reconstruction is **tapu-či-*, so that this word shows the *awV > o* sound change. Campbell notes that the term *tučín* for “armadillo” is found in Kaqchikel, Pokomam, and other languages.

4.2.2 *Archaic Nahuatl *ilamat “old woman”, probably borrowed into Western Mayan as lamat “name of eighth day”.* The word in Nahuatl is an agentive

noun derived from a denominative verb, *ilamati* “to become an old woman”, as is also the case for *wewe’* < *weweti* “to become an old man”. *ilama’* and *ilamati* appear to derive from pUA **pira-* “twisted”, **ma-* “to become, be, grow”, “to grow twisted”, cf. Eudeve *birí: birá-n* “to twist”; *ilo:-ti* “to turn back” and *ila-kactik* “twisted, spiral” are other Nahuatl words related to **pira*, while those deriving from pUA **ma’-* “to spread, extend” include *to-ma:-wa* “to grow round, fat”, *ka-ma:wa* “to ripen, grow moist”, *ča-ma:wa* “to become coarse, increase in size”; *wewe:ti* derives from pUA **wĩ* “big, great”. Although there are no chronological data as to date of diffusion, *ilamat* has been borrowed with the meaning “old woman” in non-ritual vocabulary from Nahuatl into a number of Mesoamerican languages, for example Chortí *ilama* (Fought 1972:86, 136). The patronym «Huehuet» *wewe:t* is found borrowed into Yucatec. A similar but somewhat different metaphor for growing old in Nahuatl is *ko:lli* “grandfather” < **ko:-ri* “bent over”, cf. Nahuatl *ko:lowa* “to bend”. In their discussion of the day name Justeson et al. (1985:21) cite Whittaker (1980:55) and reconstruct Western Mayan **lam(b’)at* “name of eighth day” as follows:

Another day name that may have been borrowed from Zapotec into Mayan is **lam(b’)at* (cf. Whittaker 1980b:55). The Mayan day name has no meaning in general vocabulary, and is thus plausibly a loanword. The Zapotec name for this day is given in colonial sources as «*lapa*». The «*p*» is for fortis Zapotec *pp*, which is always geminate in Zapotec, so the word was something like **lappa* in proto-Zapotec. PZap **pp* derives from pre-Zap **mp*, making the pre-Zapotec form (if any) **lampa* < pZap **laṅkwa*. Although we have no explanation for the source of the final *-t* of the Mayan forms, a pre-Zapotec source for Mayan **lam(b’)at* does seem feasible linguistically, and is the most viable source known to us. The presence of the *m* in the Mayan day name places the loan before the break-up of proto-Zapotec but after the break-up of proto-Zapotecan—the same era that glottochronological dates, if not more than half a millennium too late, suggest for the borrowing of **b’e’n*.

The Nahuatl etymology fits better phonologically than the Zapotec proposal, although ethnohistorical information is somewhat contradictory. The day sign corresponds to the *to:čín* “rabbit” day sign for the Nahuatl calendar. Although *to:čín* does not seem relatable to “old woman”, *sih-tli* “jackrabbit” is, since it has a second meaning “grandmother”. Valentin Peralta (p.c.) has noted, for example, that in the Nahuatl-speaking village of San Jerónimo Amanalco, it is said that the same word is used for “jackrabbit” as for “grandmother” because the jackrabbit’s skin is more wrinkled than that of the cottontail rabbit. On the other hand, Thompson (1962:108) relates the sign to the planet Venus. Marcus (1983:93), however, questions that identification. The planet Venus is closely tied to the masculine morning star and plumed serpent gods in

Mesoamerican cosmology. It may be that an older original name was replaced by a kind of nickname, *[i]lamat* “old lady” as the result of linguistic taboo, since even today, as Justeson et al. (1985:64) point out for highland Guatemala, “It is considered dangerous to speak the names of the days, which are sacred, out of pertinent ritual contexts”. A possible replacement pattern would be that an early Nahuatl calendar name *to:č̣in* “rabbit” was replaced by *sihtli* “jackrabbit, grandmother” and subsequently by *(i)lamat* “old woman”, and that this term was then borrowed by the Mayan languages.

4.2.3 pUA **tu-ku-ra’aw̃i* “owl, lit. the one of the night sky”. Nahuatl *tekolo:tl* is widespread as a borrowing in other languages. Kaufman (1964) gives **tuhkuru* as a Uto-Aztecan borrowing in Mayan. The etymology seems to be **tu-* “darkness, power”, **ku-* “sky”, and the **-ra’aw̃i* suffix. Although pUA **u* generally changes to *i*, as in the causative suffix **-tu[r]a* > Nahuatl **ti[y]a*, Kaufman (1981:362) has noted that the sequence *ti-* is not well tolerated in Nahuatl. In this case, **tu* could change to Nahuatl *te-*. The form *tikolo:tl* is probably the source of the Lenca borrowing *tigu* “owl”.

4.2.4 pUA **ta-(ra’a)-w̃i* “hawk”. Campbell (1977) suggests that proto-Mayan **t’iw* “eagle” is the source for the Lenca words *tigu* “owl” and *taw, taug* “hawk”. However, both can be reconstructed in Uto-Aztecan. As just noted in Section 4.2.3, **tik̃u-* or **tuku* is found for “owl” in a number of languages and belongs to the derivational noun class mentioned above in which the first part distinguishes the animal, and a suffix, **-ra-w̃i*, can be glossed “having the characteristic of”. PUA **taw̃i* “hawk” or “eagle” can be reconstructed for both northern and southern Uto-Aztecan languages. **ta* is the root for “sun” or “heat”, so the possible meaning would be “the one related with the sun”, since the **-ra* drops or assimilates after a dental consonant. The Nahuatl dialects actually show a vowel change, with and without the pUA **t > tl /__a*, since variants for “hawk” are *tohtli* and *tlohtli*, and variation is found among cognates as well. Eudeve has *toháwo* “kind of hawk”, Guarijío *ta’iwé*, and Yaqui *táawe* “hawk”. The only possible cognate from the northern languages is Hopi *taw-law̃i* “to sing”, perhaps derived from the word for “hawk” because of its prolonged cry. For both “hawk” and “owl” it would seem that the positive identification with Uto-Aztecan and the fact that it is a pre-Nahua form that precedes the *aw̃i > o* change in Nahuatl, indicate that Uto-Aztecan had been in the area for a very long time. This is supported by the fact that **t’iw* “eagle”, which would seem to be a borrowing from Uto-Aztecan, can be reconstructed for proto-Mayan.

4.2.5 pUA **k^wa-ra-wi* “eagle”. A third bird name, *koht* “eagle” with variants in K’iché, Uspanteko, and Kaqchikel, as well as Cholti «*coht*» and Yucatec *kó:t*, would fit in with species that are important in Mesoamerican culture. Campbell’s suggestion (1977) that the vowel *o* reflects a sound change found on the Gulf coast of Mexico where **k^wa- > ko-* was discussed in Section 4.1, and it was noted there that additional dialectology data show that the *k^wa- > ko-* change is shared by a number of other non-Gulf coast dialects. However, in geographical terms, it seems quite logical to think that the easier communication with the Gulf coast would make contact more frequent. There are cognate forms in other Uto-Aztecan languages that support a reconstruction like **k^wa-ra-wi* for the word “eagle”, with a possible etymology “the one characterized as being of the trees”. The *a-ra* sequence after *k^w* yields a long *a:* in Nahuatl, as in *k^wa:w-tli*. Cognates from other languages include Guarijío *wa’wé* and forms that retain reflexes of **-ra’a*, Cora *kúá’ira’abe*, Hopi *k^waahu*, and Panamint *k^winaa*. The fact that **ta-ra’a-wi* “hawk” and **k^wa-ra’a-wi* “eagle” follow opposite paths, one to *toh-tli*, *tloh-tli* and the other, to *koh-tli*, *k^wa:w-tli*, is probably conditioned by the difference in the preceding consonants **t* and **k^w*.

4.2.6 pUA **wi-çu-ri-* “hummingbird”. The fourth animal that is important in the cosmogony is the hummingbird. The Nahuatl word is *wiçilin*. Nahuatl *çi-li* derives from pUA **çu-* and what is probably a diminutive suffix **ri*. The proto-Mayan name for hummingbird is **ç’u:nu’m*. Slightly different variants of the word are also found in Jicaque. The hummingbird accompanies the sun on its daily journey across the sky. In terms of chronology, it is a pre-Nahua form with **u* that seems to be the source of proto-Mayan **ç’u:nu’m*. Otherwise the form would have been **ç’i:nim*. The initial **wi/wi-* syllable in Nahuatl is probably pUA **wi/wi* “long”, and **çu-* would be “bone, thorn”, yielding a possible etymology “the little long thorn” for the thorn-like beak of the hummingbird.

4.2.7 pUA **si-na-ra’a-wi* or **si-na’a-wi* “scorpion”, “snake”. It is the fifth animal name that is perhaps the most interesting. Reflexes are found in Southern Paiute as well as in Mayan languages with the meaning “scorpion”, at the same time that words that seem to have an identical origin are found to mean “mythical snake, monster” in the Uto-Aztecan languages spoken in northern Mexico.

The only Numic evidence found for the item comes from Southern Paiute, which attests the form *siaam’məkə* “scorpion(?), worm-like, long-tailed animal about as long as a finger, ... it hits with its tail, causing a swelling and

pain” (Sapir 1931:656). Given the vowel sequence, **sinaan-moko* is a possible reconstruction. Sapir noted that in Southern Paiute, although geminate *nn* is found, single intervocalic Numic *n* usually disappeared. There is some difference of opinion as to whether to reconstruct one proto-Uto-Aztecan intervocalic **n* for the *r/n* correspondences or to posit an **-r* in contrast with a less common **-n-*, as found in the southern Uto-Aztecan languages. The reflexes with *n* in the Sonoran languages and the fact that the word may well have been borrowed into Mayan with *n*, would support a reconstruction **si-na’awi*, or possibly **si-na-ra’awi* rather than **si-ra’awi*, since the **-ra’awi* is lost following a syllable beginning with a coronal consonant.

A possible etymology for **si-na’a-wi* would be based on pUA **si-*, found in a number of Uto-Aztecan forms with the meaning “peel”, perhaps because of the way a snake sheds its skin, while the root pUA **na-* appears independently with the meaning “burn, burning”. The expected reflexes of **si-na’a-wi* or **si-ra’a-wi* in Nahuatl would be the unattested *šino:-tl* or *šiyó:tl*, which is attested as “mange”, but the words for “scorpion” and “snake” are *ko:lo:-tl* and *ko:wa:-tl*, both probably derived from **ko’* “pain” or **ko’o* “curved”.

Consider the following cognates of pUA **si-na-ra’a-wi* or **si-na’a-wi* “scorpion”.

Uto-Aztecan. Southern Paiute *siaa’məkwə* “scorpion”; Kitanemuk *hiŋ-t* “snake”; Cahuilla *séwet* “rattlesnake”; Hopi *tsu’a* “snake” (cognate?); *putsqomoqtaqa* “scorpion” (perhaps the *-moq-* is cognate with Southern Paiute *-məkwə*); Guarijío *se’noí* “worm”, *sinóí* “snake”; Papago *hihij* “hose (such as a water hose)”, “intestines, tripe, bowels”; Tarahumara *sinówi* “snake (all kinds)”, *hí-sinawe-ra-t* “Gila monster”; Eudeve *hi-nó-daw* «*hinódauh*» “servant”, *hi-ní’o-n* (*hinóí*) “to have a servant, trust”; Tubar *-sinawe-* “reptile”. Not cognate: Yaqui *maačil* “scorpion”; Huichol *teriká* [tee.riká] “scorpion”; Nahuatl *ko[:]lo:-tl* (< **ko’* “to sting, hurt”).

As far as diffusion of such words has been considered, Kaufman (1964) reconstructs two words, **sinaŋ* and **cek* in Mayan languages, not associating either with outside influence. The word has not been identified previously as a possible Mesoamerican loan, with the exception of Campbell’s (1977:110) proposal that it was borrowed by Xinca as *çinana* from Mayan. Campbell suggests that it is probably from the Cholan subgroup because of the final *n*, rather than the postvelar fricative *x* expected from an eastern Mayan loan.

Mayan language forms are the following:⁹ Huasteco *θiniy* “scorpion”; Chicomucelteco *sini’*; Lacandon *sinam*; Yucatec Maya *si’ina’an*; Yucatec Mayan (Motul) «*cinaan*» “scorpion; also Scorpio (astronomical)”; Itza *sina’an*; Mopan *sinan*, *sina’an*; Chortí *sinam*, *sinan*; Ch’ol *siñan*; Chontal de Tabasco *sina*; Akateko *sinam* “scorpion”, *sinan* “long and narrow, like a woman’s belt or a piece of land”; Mam de Ixtlahuacán *sii’nan*; K’iché *sina’x* “sharp-pointed; scorpion”.

Wichmann (1995) suggests that similar Oto-Manguean words are borrowings in Mixe-Zoquean, giving the following forms: pOM **šwat* “snake venom” (borrowed into Mixe-Zoque; 1995:447, SI#020); pOM **šic-n* “rattlesnake, rattle” (borrowed into Mixe-Zoque; 1995:439, SI#004); Zapotec *be-š honi’* “scorpion”.

Scorpions and snakes are always associated with punishment and pain, and Mercedes-Montes de Oca (p.c.) has suggested that perhaps that is the reason that what appears to be the same word is used to name both harmful creatures. For example, a Yaqui story reflects some of the cultural tradition behind the **sina’awi* and begins:

Kiyamika katiatay sinoy nekatime weruma akichikapo kaytia wayatay animari gente yoma: waapi umatopame. “A long time ago there was a dangerous serpent along the Mayo River; they say that it ate the animals and people who walked near where it was.”

If the name of the creator god *Axomoco* or *Oxomoco* spoken of in early colonial sources is a Uto-Aztecan cognate, the association with reptiles is found again in Nahuatl cosmogony.

Although it may be onomatopoeic rather than common heritage because of the association of an *s*-sound with snakes, the parallels for the three syllables with both the Oto-Manguean and Mayan languages seem too marked to be coincidence. One question is raised by the fact, noted above, that the K’iché form with final /-x/ would correspond to a proto-Mayan form **sina’(a)ŋ* (Kaufman & Norman 1984:130). If so, as with proto-Mayan **t’iw* “hawk”, it would require a much earlier date for borrowing. However, it is not really necessary to postulate such a form to explain the Mayan forms in a borrowing of **si-na’a-wi*, since the final *-wi* could give *-x*, *-m*, and *-n* in Mayan languages.

⁹Mayan forms are from Dienhart (1997) with the exception of Akateko (Andrés et al 1996) and Chortí (Dakin 1974–1975).

4.2.8 **si-ra'a-wi* “the one who is double or twin, that is, canine”. In Dakin (2001, MS.a) the etymology of the Nahuatl canine god «*xolotl*» /šolo:-tl/ and its relationship to Numic *sin'a'awi* “coyote” are discussed. Reflexes for **si-ra'awi* “the one characterized by being in two equal parts” are given below.

Southern Paiute *sin:a-'avi-s* («*cin:a-'avi-s*») “wolf, dog”; «*cin:a-'wa-viⁿ*» “coyote”, *sin:ia-'ŋwi-* (anim. plur.) “Great Bear (Big Dipper)”; Kawaiisu *cono'o-* “twin”; Hopi *si-n*, *si-na-n* “equal, same”, *si-na-n-ta* “to be the same”; Papago *e-dathag* “shame, disgrace, scandal” (qualities associated with the dog or coyote’s behavior); Eudeve *e-ra-daw* (< *si-ra-ra-wa*) «*himus eradauh*» “affliction”; Eudeve *cú-*, *cúci* “dog”, *cúca-n* (*cúcu*, *cúcuce*) “to suck”; Tubar *cu-cú* “dog”; Huichol *siaru* “badger”, *i-ráave* “wolf”; Cora *šú'u-ra'ave-t* (Ortega 1732 «*xûravet*») “star”, Casad (2000) *šú'u-ra'ave*; Nahuatl *šolo:tl* “canine god”; *šolo:cin*, *šono:-tl* “cork tree”; *šof:]lo:-tl* “catfish”.

Reflexes of pUA **si* apparently merge with those of pUA **cu* and **co* in Yaqui, Eudeve, Tubar, Tarahumara, and Guarijío as *ču*, *čo:*. **su-* > Yaqui *čoókarai* “wrinkled”, Nahuatl *šiliwi* “to wrinkle”, Yaqui *čo'oko* “sour, salty”, *coko* and *soko* “sour”, Nahuatl *šokok* “sour”. For that reason, **si-* may be the source of *ču'u*. However, the Cora cognate for “dog”, *ci-k-* suggests that **cu* may be a valid alternative proto-Uto-Aztecan form to **si-*.

Semantic extensions of *šof:]lo:-tl* to include “catfish” and “cork tree” in Nahuatl dialects are found reflected in non-Uto-Aztecan borrowings. These include Totonacan *šu:t* “catfish”; *šú:nak* “cork tree”; Mayan *šunuk'* “cork tree”; Zoque *šunuk* “jonote or cork tree”.

In the case of the coyote, his fame as the trouble-making copycat is widely dealt with in indigenous folklore north and south. Hall (1991) has suggested that the badger was the original reference of the twin-relation of *šolo:-tl*, since it has the appearance of twins seen from above, a feature that it probably utilizes to avoid the claws of some eagles and hawks.

In any case, given the ordering of the **n* > **r* > **l* changes (or even if **l* > **n*), if the Mayan languages that have *šunuk* for “cork tree” have borrowed it directly from Uto-Aztecan languages, it must be borrowed with the form corresponding to the languages located north of Mexico, at least as known from all historical data. However, it seems more likely that it was borrowed from Nahuatl by other languages through Zoquean since the *l* in other Nahuatl loans is changed to *n* in Mixe-Zoquean. Borrowing from Zoquean, which substituted the *-k* suffix for the Nahuatl absolutive (cf. Gutiérrez Morales 1998), would also explain the *-k*.

4.2.9 pUA **ti-ra'awi* “bird”. Although the Campbell & Kaufman (1976:86) study has analysed a number of words as borrowed from a proto-Zoquean

**tu'nuk* or proto-Mixean **tu:tuk* (and **tu:t* “to lay eggs”), in Dakin (2001) it is suggested that all the terms are borrowed from Uto-Aztecan **ti[:]-ra'a-wi* “the one characterized by the stones (eggs)” —given the Mesoamerican conception of eggs as stones—a proto-form which could have produced an archaic form Nahuatl **to:-lo:-tl*. This form seems to be attested by the Pipil Nahuatl (Campbell 1985) word for “yellow”, *tul-tik*, which is specifically associated with the color of the egg yolk, since the alternative word *ko:s-tik* of most other dialects is not used; **to:-lo:-tl* may also be the source of Tequistlatec *-dulu* “turkey”, Jicaque *tolo*, and Huave *tel* “female turkey”. Subsequent consonant harmony, also reasonably common in Nahuatl, made **to:-lo:-tl* become **to:to:-tl*, the generic term for “bird”. Campbell & Kaufman (1976:83) give *tunik* and *tuluk'* forms for Tzeltal, Tzotzil, Chuj, Jacaltec, and Motozintlec. However, if the attribution to Uto-Aztecan is correct, the chronology would be that the proto-Zoque form **tu:nu:k* reflects the archaic **tolo:-tl* since the *-l-* of Nahuatl is also changed to *-n-* regularly, given that no *-n-* vs. *-l-* contrast exists in Zoque, although it does in Nahuatl. The proto-Mixe form would be a later borrowing from the generalized form **to(:)to:-tl*. Paya *totoni-* “chicken” also seems a later borrowing from Nahuatl *to:tolin*.

4.2.10 pUA **cuⁿ-ka'a-* “ant; lit. one of the bones”. Campbell & Kaufman (1976:86) proposed that the proto-Mixe-Zoque **(hah)çuku'* “ant” was borrowed as Nahua *çika-tl*, Huave *çok*, and Cacaopera *suku-l*. However, in Dakin (1997) arguments are presented for relating “ant” with **cuⁿ*, the proto-Uto-Aztecan word for “bone”, and a **-ka* suffix used in forming animal names, given the mythology surrounding the ants that Quetzalcoatl sends to bring the bones back from the land of the dead and the fact that ant hills are often surrounded by small pieces of bone left by the ants. In this case as well, the chronology of the vowel changes would suggest that, as in the case of “hummingbird”, the term was borrowed into other languages before pUA **u* > Nahuatl *i* in this environment.

4.2.11 pUA **su-pa'a-ka-* “alligator-creator god”. One of the two Nahuatl creator gods is *sipa[:]k-tli* “alligator, crocodile”. In Dakin (MS.b) I introduce evidence for deriving the name from pUA **su-* “protuberances in rows” + **pa[:]-* “on top of ” or perhaps “water” + **-ka* “animal that is located in”. In the case of the alligator, the rows of bumps on an alligator’s back are emphasized in Mesoamerican iconography, and the morpheme **su-* may be glossed with the abstract meaning in Uto-Aztecan of “surface with rows of bumps or lumps”, an image also emphasized in depictions of “corn on the cob”, Nahuatl *sin-tli* or *sen-tli* < pUA **su-nu* “corn on cob”, *si:tlalin* < **su-(ta)*

“stars”, and *is-te-tl* (< pUA **su-tu*) “claws” or “talons”. For instance, native documents emphasize an image of stars as a row of knobs against the sky, while animal claws are clearly drawn in rows on their feet. While no complete cognates for *sipa:k-tli* have been found in other Uto-Aztecan languages, some variation among dialects is seen in colonial sources, as in the central Mexican «*acipaquitli*» “swordfish” from Sahagún’s *Florentine Codex* and «*Zipanela*» “marvel” from Cortes y Zedeño’s (1765) vocabulary and grammar from Guadalajara .

Non-Uto-Aztecan language examples include colonial Huastec (Tapia Centeno 1767) «*zipac*» “swordfish” and modern Veracruz Huastec (Ochoa 2001) *sipak* “alligator”, and perhaps pMZ **ušpin* “alligator” (Wichmann 1995:257, U#043).

4.2.12 *(*ka*)*po-ci-ra’awt*. “*silk-cotton tree*”. The silk-cotton tree is central in Mesoamerican cosmogony since it connects the earth with the sky. However, the loan only seems to be shared between Nahuatl and Totonacan, not with Mayan and Mixe-Zoquean languages. Justeson et al. (1985:27) attribute the word to Totonac, arguing that it is probably not Nahuatl because it is a noun that begins with initial *p*, and an inherited pUA **p* should have been lost. However, as shown in Dakin (2001) and mentioned at the beginning of Section 4.1, there are cognates from Tarahumara and other languages that have an additional initial syllable *ka-*, as in *kapoči* “talayote, wild fruit that is green and cottony on the inside” and *kapočini* “(of pods of the tree) to burst open”, which must have been lost in Nahuatl.

4.2.13 *(*ka*)-*ka-pa* “*cacao*”. Although there are yet a number of important cases that could be mentioned, the only additional word to be dealt with is *cacao*, since there is written evidence for the stratigraphy in this case. Dakin & Wichmann (2000) have argued extensively that the important term *cacao* “cocoa beans”, used in economic exchange in Mesoamerican, is a Nahuatl word, as opposed to a Mixe-Zoquean term as suggested by earlier analyses. The Nahuatl form is *kakawa-tl* “egg-like or brittle-shelled entity” with reduplication, coming from a southern Uto-Aztecan word **kapa* “egg”, and probably from a more general proto-Uto-Aztecan word **ka-pa* “pod with brittle shell”. Words also derived from **kakawa-* are found in a number of Nahuatl dialects with a central meaning of “shell” or “husk”, while the Mixe and Zoquean terms, according to Wichmann, would have entered the languages at different times and cannot be reconstructed to a proto-Mixe-Zoque word. If our analysis is correct, then in this case there is written evidence for Nahuatl presence in southern Mesoamerica at least by A.D. 450,

since a cup engraved with Mayan glyphs that phonetically are read *ka-ka-wa* was discovered in Río Azul in Guatemala and afterwards found to contain chocolate residue. The source of the word *chocolate* is Nahuatl *čikol-a:-tl*, a compound word for “beater drink”, both stems *čikol* “beater” and *a:-* “water”, being reconstructible to proto-Uto-Aztecan. Justeson et al. (1985:59) write about the importance of the presence of the word *cacao* given the dating of the cultigen in the area:

“...cultivated cacao most likely was introduced or became popular during the Late Preclassic or late in the Middle Preclassic, in agreement with the limits of 400 B.C.–A.D. 100 for the introduction of the word **kakaw*.”

Examples of Uto-Aztecan cognates for “cacao” and “chocolate” taken from the detailed listing in Dakin & Wichmann (2000) include the following.

“cacao”: Luiseño *kavá:a-l* “clay pot”, Guarijío *ka’wá* “egg”, Yaqui *kába* “egg”, Eudeve *áa-kabo-ra’a* “egg”, Ameyaltepec (Guerrero) Nahuatl *kakawa-yo* “bark (of a tree), rind, eggshell”, Tecelcingo (Morelos) Nahuatl *tutolte-kakawa-tl* “egg shell”.

“chocolate”: Huichol *síkurá-*, Ocotepc (Morelos) Nahuatl *čikola:tl*, Cuetzalan (Puebla) Nahuatl *čikola:t*, Ameyaltepec *čikola:tl*.

Among the forms diffused to other languages are Mopan *kikih*, Chortí *kakaw*, K’iché *kaka:w*, and Matamoros Mixe *ki-ga:w* “cacao”; further Chamorro *čikulati*, seventeenth-century Dutch «*Sekulate*», Asturian Sp. *čikolate*, as well as in Mesoamerica, Huave *čikolüt*, Sayula Popoluca *čikila:t*, and Tlaxiaco Mixtec *čikulá(t)* “chocolate”.

Macri and Looper (in preparation) are working on other possible influence from Nahuatl in Yucatecan Mayan glyphs, so that perhaps more written evidence will be shown to be valid in the next few years.

4. *Conclusion*

The evidence presented in this paper should at least raise questions about the chronology of the presence of Nahuatl speakers in particular in Mesoamerica. The cases analysed even suggest contacts with speakers of other, or pre-Nahua, Uto-Aztecan languages. In some instances, the borrowings, if such, show forms that have not undergone some of the Nahuatl sound changes, for example, **u* > **i*, or **awi* > **o*. Although the amount of evidence for the etymologies is varied, it should cause a critical reconsideration of the hypothesis that Nahuatl speakers reached southern Mesoamerica no earlier than the tenth century. It may be that eventually archeologists and ethnohistorians will be able to develop new models that will allow a better solution to such linguistic puzzles.

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