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Nahuatl studies in memory of Fernando Horcasitas

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Annochipa tl̃pc. çan achica ye nican ohuaye ohuaye,
Tel ca chalchihuitl noxamani noteocuitlatl in
tlapani oo quetzalli poztequi ya hui ohuaye,
anochipa tl̃pc. çan achica ye nican ohuaya
ohuaya

NAHUATL LEXICOGRAPHY

Frances Karttunen

The Spanish friars working in 16th century New Spain were remarkable lexicographers of indigenous Mesoamerican languages. Among their artifacts are dictionaries of Yucatecan Maya, Tarascan, Mixtec, and Zapotec. For Nahuatl there are three such works, an incomplete manuscript dictionary (Newberry ms. 1478), Alonso de Molina's original Spanish-Nahuatl dictionary (Molina 1555), and Molina's great Spanish-Nahuatl/Nahuatl-Spanish dictionary (Molina 1571). There is also an early 17th-century trilingual dictionary of Spanish, Nahuatl, and Otomí (Urbano 1605). Molina's dictionary endures to this day as a major reference work for Nahuatl, and its format has been adopted for a number of other works, including the Nahuatl-French dictionary published by Rémi Siméon in Paris in the nineteenth century (Siméon 1885).

Another format for Nahuatl dictionaries was devised in the mid-20th century by the Summer Institute of Linguistics, and it too has had broad influence, even outside SIL publications. Substantial dictionaries for two modern Nahuatl-speaking communities have been published in this format, as well as a number of less comprehensive glossaries and wordlists.

Yet another direction was initiated by J. Richard Andrews in the glossary of his Classical Nahuatl textbook (Andrews 1975) and continued in the Nahuatl-English analytical dictionary currently in preparation at the University of Texas at Austin.

To date, almost all Nahuatl dictionaries have been cast in one of these three frameworks and in some version of the traditional Spanish-based orthography. A notable exception is the index to the grammatical examples in Horacio Carochi's grammar (Carochi 1892), which was produced by a group in Denmark under the leadership of Una Canger (Adrian, et al. 1976). In this work citation forms are given in International Phonetic Alphabet notation, while the attestations are given in the original orthography of the grammar.

It is something of a burden on people with an interest in Nahuatl to learn to use all the different dictionaries and variant notations.

The 1571 Molina dictionary is readily available in a facsimile edition (Molina 1970), but its format is not always well understood by potential users. Each verb entry provides in very compact form information from which most of the verb's paradigm can be extrapolated. This information is conveyed by the present and preterit forms of the verb together with object prefixes in case the verb is transitive or reflexive.

The distinction between transitive and intransitive verbs is fundamental in Nahuatl, and Molina provides information about transitivity by listing after each verb a sample set of the prefixes it may take. With intransitive verbs only a subject prefix is given. Any transitive verb must take an object as well as a subject prefix, and the object prefix may be specific, nonspecific human, nonspecific nonhuman, or reflexive. Some verbs take a direct object prefix and an oblique reflexive prefix as well, while derived forms of transitive verbs may take multiple object prefixes. In these cases Molina gives sample prefix strings. For his

purpose he has chosen the first person singular for subject and reflexive prefixes (ni- and no- respectively), and third person for the other object prefixes (c- and qui- specific singular, te- nonspecific human, and tla- nonspecific nonhuman). These are illustrative prefixes and stand in for any combination of person and number within the same pattern. A reflexive verb given with the prefixes nino- 'I-myself' also takes timo- 'you-yourself'; a transitive one with nic- 'I-it(him or her)' also takes annech- 'you(pl)-me', etc. Following this format, Molina gives grammatical information by specific example rather than by generalizing label or code.

In Molina the citation form for the intransitive verb meaning 'to go out, exit' has the form quiça.ni. This means that 'I exit' is niquiça. The transitive verb meaning 'to make something' appears as chiua.nic, nicchiua meaning 'I-it-make'. When the object of this verb is human, the verb has the special sense 'to engender, beget someone'. Molina gives this as a separate entry chiua.nite, nitechiua meaning literally 'I-someone-make'. In this case there is sufficient lexical difference between usages to justify separate entries, but Molina generally lists as separate entries a transitive verb with each of the different possible object classes -- reflexive, specific, nonspecific human and nonspecific nonhuman -- even where the basic sense of the verb remains constant and the different senses with the different object classes are entirely regular and predictable.

An example of multiple object prefixes is Molina's yeyecoltia.nicte 'to consult someone about something, to take someone's advice about something'.

The other piece of grammatical information Molina gives for verbs is the form of the preterit. This comes after the gloss and Molina (whose Spanish is written entirely without accent marks) either spells out preterito or abbreviates it and then gives the verb form with the antecessive prefix o- followed by the same sames.

ple string of subject and object prefixes as at the head of the entry, oniquiz, onicchiuh, onicteyeyecolti, etc.

Considering the detail of Molina's information about verbs, it is surprising that nouns are not given with their plurals. Only animate or quasi-animate Nahuatl nouns have distinct plural forms, but for those nouns that are overtly pluralized, the plural form is not predictable. There are several different plural suffixes, in the presence of which the noun stem may or may not reduplicate, and this is not conditioned by the shape of the stem. Nonetheless, the plural form of TLĀCA-TL 'person', for example is not part of Molina's entry for tlacatl. This is not to say that it is not in the dictionary, however. Instead it appears as an independent entry tlaca 'people'. Since Molina does not indicate long vowels or glottal stops, this plural form of TLĀCA-TL falls together in a single entry with tlaca 'during the daytime'. In the unambiguous notation of J. Richard Andrews, these would be TLĀCAH and TLAHCAH respectively, the H representing the glottal stop. In Molina there are three separate entries for the plural of MĀL-LI 'captive, prisoner of war': maltin, mamalti and mamaltin, all glossed as 'captives'. The latter two are reduplicated forms, one with the full plural suffix -tin and the other lacking the final nasal consonant, a variation characteristic of Nahuatl. Other entries intervene between malli and these entries, and there is no pointer to them from the absolute singular form. Since the citation form for Nahuatl nouns includes the absolutive suffix -- most often in the form -tl, -tli, or -li, the singular and plural forms of a noun in Molina are almost always separated by other entries in the dictionary.

Another piece of information about nouns which cannot be entirely predicted from the absolutive form is how the possessed form is made -- whether it has a suffix in the singular as in the case of Ā-TL 'water', -Ā-UH (resorting again to Andrews' notation), whether it drops a stem vowel in possessed form as in NACA-TL 'flesh, meat', -NAC, and whether it adds the suffix -YŌ in in-

alienably possessed form, NONAC 'my meat (from the market)', NONA-CAYŌ "my own flesh". Possessed forms can often be found in Molina with the possessive prefixes no- or n- 'my', to- or t- 'our', but not always, and again there is no sort of cross reference between the absolutive form and the possessed form. Molina's practice of having entirely separate entries for plural and possessed forms is another manifestation of his practice of giving a very specific example and leaving it to the reader to generalize.
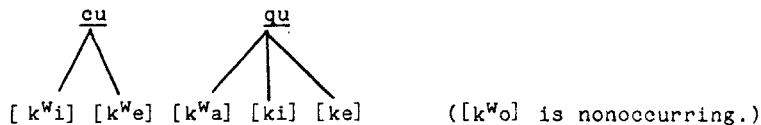
Other practices of Molina with which a user must be familiar are mainly orthographic. M uses ç (always lower case, even as the initial letter of an entry, where M otherwise uses capitals) to represent [s] before vowels other than i and e; z is used syllable-finally, and s is not used at all. There are two ways to alphabetize ç in a dictionary. One is to treat it as a separate letter that follows c, and the other is to not differentiate it from c. Treating ç as distinct from c creates blocks of ç, while not differentiating it means that c and ç are interspersed. M is inconsistent between these two approaches, so a user of the dictionary must check both possibilities. Contrary to Spanish usage, the sequence ch is also intergrated with c rather than having a separate section of its own (although the Spanish-to-Nahuatl side of the dictionary observes the conventional Spanish alphabetization.)

Molina treats i and y as the same for purposes of alphabetization. Somewhat at variance with the common convention of writing y initially and i elsewhere (yn 'the', yuhqui 'thus', ylpia 'to tie'), in Molina y is written adjacent to vowels, and i is generally used for a full syllabic vowel (yaotl 'enemy', mayana 'to be hungry', maytl 'hand'; in, iuhqui, ilpia). This is not consistent, however, so that ayc and aic both occur, and in contiguous entries. The sequences IYA and IĀ are both written as ia, a practice that obscures the facts that Nahuatl has a vowel [i] and a nonvowel [y] and that in paradigms the sequence IYA behaves differently from IĀ. This is also true for the sequences OHUA and OĀ.

Another pair of letters treated as one for purposes of alphabetization are V̲ and u̲. V̲ serves as the upper case counterpart of u̲ and appears word-initially, while u̲ is used intervocalically and u̲h syllable-finally. Some h̲u̲'s appear syllable-initially, especially where the preceding syllable ends in a glottal stop, as in tehuatl for TEHHUĀ-TL.

Aside from syllable-final u̲h, the letter h̲ is marginally used in Molina; it appears mainly in exclamations and a few Spanish loanwords. It is used, however, though not very often, to indicate the presence of a glottal stop, especially where reduplication applies to a vowel-initial stem: ahauia 'to enjoy oneself', ihiotl 'breath'.

While Molina's use of ç̲ brings together in one block all words beginning with phonetic [s], he separates [k^w] before [i] and [e] from [k^w] before [a] by writing the former as cu̲ and the latter as qu̲.

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      cu              qu
      /\              /|\
     /  \            / | \
 [kʷi] [kʷe]    [kʷa] [ki] [ke]      ([kʷo] is nonoccurring.)
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Syllable-final [k^w] is represented by cu̲ rather than by the u̲c of later convention (tecutli instead of teuctli for [te:kʷtli]), which can be misleading, since it suggests an additional syllable where there is none.

Finally, Molina has both o̲ and u̲ where there is no such distinction in Nahuatl. This use of u̲ is not the one in which u̲ alternates with v̲ to represent phonetic [w], but an alternation with o̲ to represent a full syllabic vowel. YŌLLOH-TLI 'heart' appears in two separate entries, yollotli and yullutli. In some cases only the citation form with u̲ appears; more often only the citation form with o̲. The user must check both possibilities. Although the language does not contrast these two vowels directly, it does have contrastive vowel length, and this has been perceived and recorded on occasion as an alternation of [o] with [u], the latter as the realization of the long vowel. But, as illustrated by the entries for YŌLLOH-TLI, the u̲'s of Molina do not exclusively or exhaustively represent the long vowel.

Major omissions from Molina's dictionary are regular notation of glottal stop (the instances of h̲ with this function being very few) and any indication at all of distinctive vowel length. This leads to single entries in the dictionary that combine the glosses of two different lexical items, and sometimes more. For instance, Molina's auatl 'oak, woolly caterpillar, thorn' represents ĀHUA-TL 'oak', ĀHUĀ-TL 'woolly caterpillar', and AHHUA-TL 'thorn'. The entry metztli 'moon, or leg of a man or animal, or month' merges MĒTZ-TLI 'moon, month' with METZ-TLI 'thigh, leg'. The entry patla.nitla referring to exchanging something or dissolving something represents PATLA 'to change, exchange something' and PĀTLA 'to melt, dissolve something'. Ambiguity pervades the dictionary and can seriously mislead the unwary. It is ever so tempting to construct semantic bridges between items that do not share the same etymology, derivational history, or phonological shape when the notation renders them identical.

There is an asymmetry between the Spanish-to-Nahuatl side of Molina and the Nahuatl-to-Spanish side, a few items appearing only in the former and not in the latter.

Needless to say, Molina also contains its share of misprints, inversions of characters, items out of alphabetical order, and the like.

Examples:

Entry out of order: nacazecatoca
                    nacacic ninoteca
                    nacaziconoc   folio 62r

where nacacic repeatedly occurs properly alphabetized
on folio 61v

Wrong character: nencuilia for neneuilia folio 68r

                     memmauhtia for nemmauhtia folio 69v

                     vittomonia for xittomonia folio 159v

Inverted letter: qnachichiltic for quachichiltic folio 84r

Except for nencuilia, these errors all appear in the original
1571 edition of Molina and are faithfully reproduced in the 1970
facsimile edition; nencuilia is an introduced error in the facsim-
ile. Such errors are usually obvious in context, since they do not
fit the alphabetization or the possible shape of a Nahuatl word,
but inversion of n is indistinguishable from u. Also, the tall s
of the typeface is difficult to distinguish from f. Fortunately,
both s and f only occur in the Spanish, not the Nahuatl.

The operating alphabetical order for the Nahuatl-to-Spanish
side of Molina is the following: A, C (including Ç and CH), E, H,
I/Y, M, N, O, P, Q, T (including TL and TZ), V/U, X.

Two works that followed Molina do indicate glottal stops and
distinctive vowel length. Carochi's Arte de la lengva mexicana
(Carochi 1645) presents a great deal of vocabulary in grammatical
examples. There are both phrases and paradigms, and with verbs
Carochi occasionally uses Molina's format in which the verb is
followed by representative prefixes. But Carochi adds diacritics
indicating long vowels, specifically short vowels, and glottal
stops, and he presents a list of minimal pairs for these, expanding
somewhat on the list that appears in Rincón's earlier grammar
(Rincón 1595). The work by Canger, et al., is a synthesis of the
vocabulary of Carochi's grammatical examples as they appear in the
1892 reprinting of his work, while the original 1645 grammar serves
as a major source for the University of Texas dictionary.

Another dictionary ultimately derivative of Carochi is
Diccionario de la lengua nahuatl (Macazaga Ordoño 1979). In 1759
Ignacio de Paredes published a 'compendium' of Carochi's grammar
(Paredes 1759a), and this is a glossary based on that publication.
Carochi's careful diacritics were already mishandled in Paredes;
Macazaga Ordoño dispenses with them altogether and provides very
little other grammatical information. Attractively illustrated
with line drawings of central Mexican art, this is a popular book
rather than a scholarly reference work.

Francisco Xavier Clavijero's wordlist appended to his grammar
Reglas de la lengua mexicana (Clavijero 1974) written in the mid-
18th century consistently uses Molina's format and also uses dia-
critics with some items but by no means with all of them.

More than a hundred years later Siméon compiled a comprehen-
sive dictionary drawing on Molina, Carochi, Clavijero, and a number
of other texts for lexical material. (Since Molina's dictionary is
by far the largest of these sources, Siméon's entries mainly rep-
licate Molina's, but there is significant additional material.)
Like Molina, Siméon does not mark vowel length or glottal stop. He
adopts all the same orthographic conventions but settles on the
consistent practice of treating c and ç as one for purposes of al-
phabetization. The structure of an entry is the following: lexical
item, part of speech, gloss, source, derivational source if there
is one. For verbs, in place of part of speech the preterit form
and sample prefixes are given following Molina's model. Siméon,
however, gives the preterit in the third person singular form.

Siméon differs from Molina in format in several noteworthy
ways. The first is that he combines into one entry the different
uses of a single item, especially the combination of a verb with
different classes of object prefixes that leads to separate entries
in Molina. Plurals and possessed forms appear as part of the entry
for nouns. And Siméon gives etymological or derivational material
which serves as a cross-referencing device within the dictionary.

Unfortunately, Siméon is somewhat unreliable in identifying Nahuatl roots. This is partly due to the handicap of not having information about distinctive vowel length and glottal stop, but the problem extends beyond this.

Siméon's dictionary as originally published was Nahuatl-French. An excellent Spanish translation has recently been published (Siméon 1977).

Molina's dictionary has served as a model or source for Nahuatl lexicography in every century since its publication. A twentieth century effort within its framework has been made by R. Joe Campbell, whose as yet unpublished work includes a complete translation of Molina into English and a morpheme index to the dictionary.

Translations of Molina are potentially useful even for the Spanish-speaking user. The Spanish of the sixteenth-century original is difficult and can prove a stumbling block. A careful and competent translation involves modernization and removes much of the difficulty. This is especially evident in the Spanish translation of Siméon. The work was not simply put back into Molina's original words but genuinely translated into modern Spanish. Campbell's translation into English may serve the same purpose.

A strikingly different format is that of the Summer Institute of Linguistics. This format, which is followed in the dictionaries of Tetelcingo (Brewer and Brewer 1971) and Zacapoaxtla (Key and Key 1953), the glossary of a pair of Huastecan Nahuatl textbooks (Beller and Beller 1976,1979), the dictionary of Xalitla Nahuatl (Ramírez and Dakin 1979) (which is not an SIL publication), and to some extent in the recent Huastecan Nahuatl field vocabulary (Stiles 1980) (also not published by SIL), gives transitive and reflexive verbs in their prefixed forms, alphabetized by the prefix rather than the stem. This forms blocks of verbs under c-, qui-, te-, tla-, and mo- (for specific, nonspecific human, nonspecific

nonhuman, and reflexive objects). Nouns referring to body parts, kinship relations, and other inalienable possessions are given with the third person singular possessor prefix i-. As with Molina's sample prefixes, the prefixes in the SIL format are stand-ins for all the prefixes of their classes.

The motivation for listing lexical items in prefixed form is said to be the preference of native speakers for this citation form. There are several rather negative consequences for the user, however. To begin with, the practice creates disproportionately large sections under the third person singular specific object prefix qui- and its shortened form c- containing most of the transitive verbs of the language. Likewise there are outsize sections of initial reflexive mo-, nonspecific tla- and te- and possessive i-. Within these sections the stems are not entirely in alphabetical order, since these prefixes in some cases cause mutation or loss of the initial stem vowel. The reflexive form of iTTA 'to see', for instance, is MOTTA (Zacapoaxtla mota, Tetelcingo mojta). Secondly, the reflexive and transitive uses of a verb are separated, one alphabetized under m, the other under c or q. If there is a related intransitive verb, it is yet somewhere else, and there is no cross reference. This would be the case with POLOA:, for example, which in the Tetelcingo dictionary is found in reflexive form mopoloa on page 156, and in transitive form quipoloa on page 198, while the related intransitive form polihui is on page 175. In Molina, by contrast, there are four separate but contiguous entries for poloa with different object prefixes, and poliui is just above with two derived nouns.

The practice of listing many nouns only in possessed form leaves the user of the dictionary in the dark about which absolutive suffix such a noun would take if it were not possessed. Many nouns of this type very rarely occur in absolutive form, and elicitation would undoubtedly be quite artificial, but many of the nouns so listed in the Zacapoaxtla and Tetelcingo dictionaries are attested in absolutive form elsewhere. Since the absolutive form

is not entirely predictable from the stem form, this is important information to have.

Finally, in this format there is no indication of the boundary between stem and affix, as there is in the Molina format, which (at least for verbs) separates the prefixes and lists them after the stem.

The Zacapoaxtla, and Tetelcingo dictionaries indicate vowel length and glottal stops or their reflexes (the short/long distinction having evolved into a vowel quality distinction in Tetelcingo). Both works on Huastecan Nahuatl indicate glottal stops but no distinctive vowel length, presumably because the distinction has been lost there. The Zacapoaxtla dictionary suffers from internal inconsistency, with the vowel length and glottal stop patterns of the Spanish-Nahuatl side failing to match those of the Nahuatl-Spanish side. There also seems to be confusion of stressed vowels with long vowels. The Tetelcingo dictionary, on the other hand, is highly consistent with itself and with the vowel length and glottal stop patterns of Carochi and other older Nahuatl sources. The Xalitla dictionary marks vowel length but few reflexes of glottal stops, and those mainly inflectional rather than stem-internal. It is internally consistent but somewhat inconsistent with other sources. The inconsistencies of vowel length patterning are not systematic, and so do not appear to reflect a principled dialectal divergence.

In 1975 J. Richard Andrews published An Introduction to Classical Nahuatl in which he largely reproduced and rationalized the phonological and grammatical information implicit in Carochi's grammar. The glossary of his textbook in many respects sets a standard for all future Nahuatl lexicography.

Andrews uses a fairly traditional orthography but abandons ç for Z. As in the SIL dictionaries CU is used for [kʷ] before all vowels; syllable-finally it is represented with UC. Similarly, [w]

is represented by HU syllable-initially and UH syllable-finally. Sequences of IĀ and IYA are distinguished, as are OĀ and OHUA. The glottal stop is represented by H. A glottal stop followed by [w] is written -HHU-, as in TEHHUĀTL. Long vowels are marked with a macron.

While Molina, Clavijero, and Siméon alphabetize mainly by the Latin conventions and the SIL format by the specifically Spanish convention that separates out CH to follow C, Andrews alphabetizes according to Nahuatl's own phonological system, with CH and CU both following C, and TL and TZ both following T. The full alphabetization of Andrews notation is A, C, CH, CU, E, HU, I, M, N, O, P, QU, T, TL, TZ, X, Y, Z. The entries are by stem with relevant prefix information after the stem. Information about preterit, plural, and possessed forms is included in the entry.

At present Andrews' glossary is the best lexicographic guide to Nahuatl in existence. It is limited in a few respects. First, as a section of a textbook it is necessarily brief. Secondly, it is organized in such a way that derivations are listed under stems, making less-than-transparent derivations difficult to find. TLAXCALLI 'bread' is under iXCA 'to bake something', AHTLAPALLI 'wing' under the negative particle AH-. And third, it is based on only a partial survey of the sources that can provide consistent phonological information, and does not identify the contributing sources for individual entries.

Currently in preparation is An Analytical Dictionary of Nahuatl, which expands on Andrews' work. The dictionary is analytical in two important ways. First of all, it is a synthesis of information drawn from sources that cannot be directly compared because of notational and dialectical differences. The sources, four major and three minor ones (Bancroft ms. mPM4068.J83 (huehuetlatolli), Carochi 1645, the Tetelcingo dictionary, the Zacapoaxtla dictionary, Clavijero's grammar and wordlist, the Xalitla dictionary, and a collection of sermons (Paredes 1759b)) are

both historically and geographically distributed, so that it is a dictionary of general Nahuatl, the common stock of the language as recorded at several places and at several points in history. The sources have been exhaustively surveyed and compared, and consistent canonical forms have been created from which the various historical and dialectal forms can in large part be derived by explicit general rules.

Only sources which represent vowel length distinctions and glottal stops have been used, and there are only entries for items in which these features can be known. As a result, some entries in Molina are not to be found in this new dictionary, but given the existing entries and the general morphological rules of the language, much (if not most) of Molina can be extrapolated.

Secondly, the dictionary is analytical in that it provides extensive cross reference from compounds and derivations to the basic elements from which they are formed.

There are no Spanish loanwords in the dictionary, since loans vary greatly in their degree of assimilation to Nahuatl, and no single canonical standard can be established.

The dictionary shares the conventions of Andrews' notation and will be alphabetized in the same way. Insofar as they are attested or entirely predictable, preterit, plural, and possessed forms are given as part of the entry or are derivable from the canonical form by general rules stated in the introduction to the dictionary.

There are currently approximately 8,500 entries in the analytical dictionary.

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STRESS IN MODERN NAHUATL DIALECTS

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Most present-day Nahuatl dialects have predictable stress on the penult just as Classical Nahuatl did. There are some, however, which do not have this pattern and which will be briefly discussed here.[1]

In Rancho Agua Fría, Mezquital, Durango we find the regular pattern in words like <u>aténko</u> 'river', <u>méste</u> 'moon', <u>kámak</u> 'mouth'. But many nouns which have a final vowel in Central Nahuatl end in a consonant in this dialect. The stress falls on the vowel which corresponds to the penult in Central Nahuatl.[2] Thus we find:

Mezquital	Central	Gloss
-li		
tamasól	tamasólli	toad
temál	temálli	pus
toná:t	tonálli	sun
-λi		
čayót	čayóʔλi	chayote

-λ final absolutes of other dialects have penultimate stress in words like:

sáwat	sáwaλ	small pox
nákat	nákaλ	meat

but we also find some where stress is final with or without loss of final /t/: