

# A New Look at Language Contact in Amerindian Languages

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## (Changing) Word Prosody in Nahuatl<sup>1</sup>

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*Nahuatl word prosody has changed over the last 500 years, and that change has gone further in some dialects than in others. According to descriptions from the 16th and 17th centuries by Spanish friars, vowel quantity was the basic characteristic of Nahuatl, and they recognized no phonetic stress accent. Subsequently, in many present-day dialects the quantity distinction has weakened, and in these dialects stress falls predictably on the penultimate syllable. In at least one dialect the quantity distinction has disappeared completely, and stress has become part of the morphological system. The extent to which this process of change is due to Spanish influence or reflects universal prosodic tendencies is discussed.*

### 1. Nahuatl word prosody in the 16th and 17th centuries

Grammars from the 16th and 17th centuries give descriptions of the pronunciation of Nahuatl. These descriptions are obviously of utmost value since — at least for the first ones it must be assumed that they are based exclusively on the authors' personal observations; and the early observers heard the language spoken before any influence on Nahuatl from Spanish could have taken place. At least for the earliest descriptions, most importantly, something as rare as careful descriptions of word prosody is found in two grammars written by Jesuits. For this paper I wish to focus on the early grammarians' discussions of, and on their descriptions of, word prosody in Nahuatl.

The traditional and practically unquestioned hypothesis is that in Nahuatl of the 16th century words were marked by a predictable, penultimate stress as we find it described in most Nahuatl dialects spoken today. However, this hypothesis is not confirmed by the early descriptions of the language. The hypothesis that 16<sup>th</sup> century Nahuatl had penultimate stress was convincingly refuted by William Bright in 1960, but his brief note seems to have gone unnoticed until today. I hasten to emphasize that the term “stress” is used here simply to mean prominence of a syllable regardless of its phonetic correlates. The problem of word prosody and the descriptions of pronunciation of Nahuatl in 16th and 17th centuries have been dealt with from several perspectives, and the various scholars have all cited the early grammarians (Whorf, 1993; Smith Stark, 1996; Suárez Roca, 2000). However, in spite of such discussions I do not find that these highly valuable sources have been exhausted or even studied thoroughly enough for the use that can be made of them. Therefore, I shall have to include fairly long quotations in order to make my analysis and arguments clear.

#### 1.1. *The Franciscans Andrés de Olmos and Alonso de Molina*

The Franciscan Andrés de Olmos, who in 1547 wrote the earliest grammar that has survived, is not very detailed in his treatment of word prosody. He expresses uncertainty in the interpretation of what he calls the accent (*acento*); it is unclear how his word *acento* should be interpreted, but I assume that also his own understanding of the term was vague, possibly implying prominence. He explains that words are (prosodically) composite and sometimes have two accents.

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<sup>1</sup> Nina Grønnum has read an early version of this paper, and Lyle Campbell has read a much later one; their comments have been highly useful. So have comments by Karen Dakin. However, I take full responsibility for whatever inconsistencies and nonsense the reader may encounter.

No hablo en el acento por ger [sic!] mūy vario y no estar ni dexar siempre las dictiones enteras sino compuestas, y porque algn<sup>o</sup>s vocablos parecē tener algunas vezes dos acentos; por lo qual lo dexo a quien Dios fuere seruido darle mas animo para ello, (1547; f 22r).<sup>2</sup>

The next grammar was written by the Franciscan, Alonso de Molina, who is undoubtedly better known for his impressive *Vocabulario en lengva castellana y mexicana y en lengva mexicana y castellana*. The first edition of his *Arte* was published in 1571, and a new, revised edition quickly appeared in 1576. Like Olmos, Molina perceived and described Nahuatl with Spanish (and Latin) as the obvious frame of reference. Molina's basic, and for my purpose, crucial observation is that, "no alçan mas vna sillaba q̃ otra ē su hablar y platicas" (f 27r, 217).<sup>3</sup> We cannot know precisely what he meant by the word *alçan*, whether greater force or higher pitch, but I assume it was close to present-day Spanish stress.

Both Olmos and Molina seem to search in vain for the Spanish phonetic stress which — in most cases — falls on the penultimate syllable. Olmos claims to hear at times two syllables with prominence and Molina seems not to be able to identify even one.

In order to understand why Olmos and Molina chose to describe Nahuatl prosody the way they did we have to look at their "linguistic background." For excellent and obvious reasons they both base their descriptions on the first Spanish grammar, namely that of Elio Antonio de Nebrija first published in 1492 — and likely also on his Latin grammar — first published in 1481 under the title *Introducciones latinae*. Nebrija frequently refers to other classic scholars and to languages that he had studied, Greek, Latin, Hebrew, and Arabic; he typically mentions the speakers of these languages rather than the languages themselves, for example, in speaking of Spanish, he comments that "ni judios. ni moros. ni griegos. ni latinos, la puedē p, nūciar" (124; f 6v).<sup>4</sup>

Nebrija's grammar of Spanish is made up of five books; with reference to Greek tradition; the first book deals with *orthographia y letra* and the second with *prosodia y silaba*. Recall that Molina took the syllable as the central element in his description of Nahuatl word prosody.

In the first chapter of the book on *prosodia y silaba* Nebrija says,

Tiene la silaba tres accidentes. numero de letras. longura en tiempo. altura τ bax<sup>u</sup>ra en acento. ...Tiene esso mesmo [el latín] la silaba lōgura de tiempo: por que unas son cortas: τ otras luēgas: lo cual sientē la lengua griega τ latina. τ llamā silabas cortas τ breves alas q̃ gastan un tiempo en su pronunciacion. luengas, alas que gastan dos tiēpos; .... *mas el castellano no puede sentir esta diferencia*: ni los que componen versos pueden distinguir las silabas luengas delas breves: " (147; f 17r; emphasis mine)<sup>5</sup>

<sup>2</sup> I do not talk about the accent since it is quite varied and does not keep the words as units, but composed, and because some words seem some times to have two accents; therefore I leave it to him whom God might have equipped with more valor for it/interest in it, (1547: 11).

<sup>3</sup> In their talk and speech they do not raise one syllable more than any other.

<sup>4</sup> Neither Jews, Moors, Greeks, nor Romans can pronounce it.

<sup>5</sup> The syllable has three properties, number of letters, time span, height and lowness in accent. .... This same [Latin] has the syllable length in time because some are short and others long, this the Greek and Latin languages feel, and syllables that take up one time span in their pronunciation they call short and

Concerning the *acentos*, he again first has some general comments, followed by remarks that refer specifically to Spanish,

...el que habla, que es oficio propio del ombre: τ el que reza versos, que llamamos poeta: τ el que canta que dizimos musico: todos cantā en su manera. Canta el poeta no como el que habla: ni menos como el q̃ cāta: mas en una media manera...τ assí el que habla: por que alça unas silabas: τ abax<sup>u</sup>a otras: en alguna manera cāta. Assi, que ai enel castellano dos acētos simples: uno, por el cual la silaba se alça: q̃ llamamos agudo. otro, por el cual la silaba se abax<sup>u</sup>a: q̃ llamamos grave. como enesta dición señor. la primera silaba es grave. τ la segūda aguda. τ por cōsiguiēte la primera se pronūcia por acento grave. τ la segunda por acento agudo (149: f 17v).<sup>6</sup>

Later he goes on to formulate a rule which he claims is valid for all languages,

Assí q̃ sea la primera regla del acento simple: q̃ cualquiera palabra no sola mēte en nuestra lengua mas en cualquiera otra que sea: tiene una silaba alta: que se enseñorea sobre las otras: la cual pronūciamos por acēto agudo: τ que todas las otras se pronūciā por acēto grave. De manera, q̃ si tiene una silaba, aquella sera aguda. si dos o mas: la una dellas como enestas diciones: sal. saber. sabidor. las ultimas silabas tienē acento agudo: τ todas las otras acento grave (149: f 18r; emphasis mine).<sup>7</sup>

This very precise description leaves no doubt as to Nebrija's understanding of the two terms, *agudo* and *grave*; he uses the term *agudo* to describe the one syllable in a word which is more prominent than the others; and *grave* to name all the other syllables in the word. Finally he gives a more precise description of Spanish word prosody,

La segunda regla sea q̃ todas las palabras de nuestra lengua comū mente tienen el acento agudo enla penultima silaba. τ enlas diciones barbaras o cortadas del latin, enla ultima silaba muchas vezes (150; f 18r).<sup>8</sup>

Nebrija then adds four more rules that account for cases of non-penultimate stress in Spanish.

brief, those that take up two time spans in their pronunciation they call long; ... But Spanish does not feel this difference, neither can those who compose verses distinguish long syllables from short ones.

<sup>6</sup> He who speaks, which is the natural occupation of man, and he who recites, whom we call a poet, and he who sings, whom we call a musician, they all sing in their manner. The poet sings not like he who speaks, and less like he who sings, but rather in an in-between way; .... and thus the one who speaks - since he raises one syllable and lowers others, in some way he sings. There are thus in Spanish two simple accents: one by which the syllable is raised that we call acute; another by which the syllable is lowered that we call grave. Like in this word, "señor", the first syllable is grave, and the second acute, and, consequently, the first is pronounced with a grave accent and the second with an acute accent.

<sup>7</sup> Thus the first rule for the simple accent should be that any word, *not only in our language, but in any other language whatsoever, has one high syllable which dominates the others, and this we pronounce with an acute accent, and that all the others are pronounced with a grave accent*. That means that if it has one syllable, it will be acute; if it has two or more, one of them will, like in these words: *sal saber, sabidor*; the final syllables have the acute accent, and all the others have the grave accent.

<sup>8</sup> The second rule should be that all the words in our language normally have the acute accent on the penultimate syllable, and in foreign words or those taken from Latin often [have it] on the final syllable.

Olmos' and Molina's frustration over Nahuatl word prosody may well have its roots in Nebrija's categorical statement that "every word, not only in our language, but in all other languages, has one high syllable which dominates the others" (150; f18r), a feature which apparently they were unable to find in Nahuatl.

These first two descriptions give us only a hint about some of the problems which the old grammarians encountered in wanting to describe the pronunciation of Nahuatl word prosody. The subsequent grammars, written by two well-known Jesuits, give us far more detailed and sophisticated descriptions.

### 1.2. The Jesuit Antonio del Rincón

In his *Arte mexicana* from 1595, Antonio del Rincón presents his observations "About the pronunciation and accent of the syllable" (*De la pronvnciacion y accento de la sillaba*), the title of the fifth book of his *Arte*. Antonio del Rincón's observations deserve special attention not only because he is more detailed and careful in his attempt to describe the prosodic features of words, but because he was a mestizo, born in New Spain into a family in Tezcoco (Hernandez de León-Portilla, 1988: 48); in other words, Nahuatl was his mother-tongue. The five books in his *Arte* are of fairly equal length, from six to ten pages in the edition of 1888-89, and the fifth book takes up seven pages, of which the first six deal with syllable prosody (*Accento de la sillaba*), and barely one page treats segmental phonology. In the *Prólogo al lector*, Rincón comments briefly on the five books; about book five he says,

El. V. y vltimo libro trata d'la pronũciaciõ y accẽto, y aun en esto auendonos aprouechado del latin en lo q' el mexicano le es semejãte: van juntamẽte puestas reglas para la pronũciaciõ y accẽtos nuevos q' a esta lẽgua le sõ propios, y no se hallã en las demas (232; f 2r; emphasis mine).<sup>9</sup>

The similarity that he sees between Latin and Nahuatl may have to do with vowel quantity.

For the *pronvnciacion y accentos*, he sets up two parameters: the quantity of the syllables and what he calls *acentos*. In the parameter of quantity he recognizes three *maneras*: long syllable, short syllable, and "equal" (*igual*) syllable.

His second parameter, *accento*, has five elements. This parameter can hardly be correlated with anything that we would recognize as a category today; it appears to include pitch movements, frequency of occurrence, and the so-called *saltillo* (little jump), an element in Nahuatl of central Mexico had — and continues to show — two quite distinct variants, a glottal stop and an h-like pronunciation in utterance final position. In other dialects an h is found in place of *saltillo*. He explains:

Pues conforme a esta diuersidad de la cantidad de la syllaba, se hallan cinco diferencias de accentos porque en la syllaba larga ay accento acuto y graue. En la

<sup>9</sup> The 5th and final book deals with pronunciation and accent, and even in this we have profited from Latin where the Mexicano is similar to it: the established rules for the pronunciation go together with new accents that are characteristic for this language, and that are not found in other [languages].

syllaba breue ay accento breue predominante, y el saltillo. La syllaba ygual tiene su accento semejante que se llama accento moderado.<sup>10</sup>

Table 1. Antonio del Rincón's two parameters

QUANTITY	ACCENTOS
Long	acute ( <u>not</u> in word final position)
	grave ( <u>only</u> in word final position)
Short	(without <i>saltillo</i> ) <i>predominante</i>
	with <i>saltillo</i>
Neutral	moderate

The term *predominante* here, I believe, refers to their being the most common of the short syllables. That was his *naming* or identification of the *acentos*. His *description* of them goes as follows:

Accento agudo es el que fuera de alargar la syllaba le añade vn tono que leuanta la pronvnciacion con sonido agudo, v.g. *milli*, *tilli*; accento graue es el que fuera de alargar la syllaba, añade vn sonido graue con que la abaja el tono, v.g. *teotl*, *ciuatl*; accento breue, predominante es el que por si mismo rige la diction donde se halla con pronvnciacion acelerada y presta, v.g. *mecatl*, *çacatl*. Accento del saltillo es, quando la syllaba breue se pronuncia con alguna aspereza como, *tlaçolli* (264; f 63r-v).<sup>11</sup>

This is where his description ends. Unfortunately we get no description of his *accento moderado*. It could be that it has level pitch, and that may be what he is implying when he introduces it by saying, "La syllaba ygual tiene su accento semejante que se llama accento moderado" (264; f 63r).<sup>12</sup>

Whether Rincón's *levantar* and *abajar* mean the raising and lowering of pitch or simply high and low pitch is unclear; his use of the term *tono* does seem to point to low and high. What is absolutely clear, however, is that the two are in complementary distribution. He explicitly states that the grave accent is found only in final syllable, and that the acute accent is not found in final syllable.

Nota de los deriuatiuos que tambien guardan el accento de sus radicales de donde se deriuan. v.g. *temaquixtiani*, tiene el *ma*, agudo como su radical *maquixtia* sacandose los nombres en. *illi*. y en *olli*, que tienen el accento agudo en la penultima que quando pierden la vltima, por juntarse a los genitiuos, la que era penultima de antes es ya vltima, y assi se muda el accento agudo en graue porque en la vltima nunca puede

<sup>10</sup> Now, in accordance with the diversity in the quantity of syllables there are five differences in accents because for the long syllable there are acute accent and grave accent. In the short syllable there are the predominant, short accent and the "saltillo". The equal syllable has its corresponding accent which is called the moderate accent.

<sup>11</sup> The acute accent is the one which - apart from lengthening of the syllable - adds a tone/pitch which raises the pronunciation with an acute sound, v.g. *milli*, *tilli* [*milli* 'field', *tilli* 'black']; the grave accent is the one which - apart from lengthening the syllable - adds a grave sound with which it lowers the tone/pitch, v.g. *teotl*, *ciuatl* [*teōtl* 'god', *ciuātl* 'woman']; the predominant, short accent is the one that simply [por sí mismo] governs the word, where it is found, with an accelerated and quick pronunciation, v.g. *mecatl*, *çacatl* ['cord', 'grass']. The accent of the saltillo is when the short syllable is pronounced with some roughness like, *tlaçolli* [*tla?çolli* 'refuse', the saltillo comes after the a].

<sup>12</sup> The equal syllable has its corresponding accent which is called the moderate accent.

hauer accento agudo: netlamachtilli, nonetlamachtil; necuiltonolli, nonecuiltonol (265-66; f 66v-67r; emphasis mine).<sup>13</sup>

However, he gives one exception to this absolute rule, namely the case of the vocative, “Nota que nunca se pone accento agudo en la vltima sino es en la. e. de los vocativos, verbi gracia, *totecuioe Diose*” (266; f 67r).<sup>14</sup>

The occurrence of the acute accent is not restricted to the penultimate syllable. In a list of morphologically defined situations with automatic acute accent he gives one in which the morpheme in focus typically occurs in the antepenultimate, but it may also occur earlier in the word, “La ligatura. *ca.* en toda composicion, tiene siempre accento agudo en si. v. g. *nichipauacanemi, nichicauacatlatoa*” (266; f 68v).<sup>15</sup>

It should be clear from the passages quoted that Rincón's description is not phonemic. On the contrary, he puts great effort into describing what he hears, and how the words are pronounced, but he expresses these phonetic observations in a highly systematized way. One might speculate to what extent his description of prosody is based on utterances rather than being restricted to individual words pronounced in isolation.

I have mentioned that Rincón, in his advice on how to handle the difficulty of pronouncing *accento* correctly, uses the term *tono*, a term also used by Molina. Rincón suggests that you should simply avoid *accento* and pronounce, “yualmente todas las sillabas de la diction, assi como *nitetlaçotla*. pronunciando *con yqual boz, tono y medida* estas cinco sillabas”(f 28r; emphasis mine).<sup>16</sup> Going back to Nebrija we should remark that he uses the word, *tono* only when he deals with poetry in book 2, chapter 5, and even there it occurs only once. This to me suggests that Molina and Rincón hear some pitch phenomenon that they do not recognize in Spanish.

For his *accentos* Rincón proposes diacritics, and he explicitly differentiates *accentos* (i.e. the phenomena that he perceives) from the written diacritics by calling the latter *caracteres*. He introduces four *caracteres* for his five *diferencias de accentos*. In this notational system he thus chooses to mark only the *accentos*, but since quantity is linked to the *accentos*, his *caracteres* in fact cover both parameters.

<sup>13</sup> Note about derivatives which also retain the accent of the roots from which they are derived, v.g. *temaquixtiani* (“saviour”) has *ma*, acute like its root *maquixtia*; an exception are nouns in *illi* and in *olli* that have the acute accent in the penultimate which, when they lose the final (syllable) because they are joined with the genitives, that which was previously the penultimate is now the final one, and thus the acute accent changes to grave because in the final (syllable) there can never be an acute accent: *netlamachtilli* ('wealth'), *nonetlamachtil* ('my wealth'); *necuiltonolli* ('wealth'), *nonecuiltonol* ('my wealth').

<sup>14</sup> Note that the acute accent is never placed on the final syllable except in the *e* of the vocatives, verbi gracia, *totecuioe Diose* ('our lord God!').

<sup>15</sup> The ligature *ca* always has the acute accent in all compounds, v. g. *nichipauacanemi* ('I live chastely'), *nichicauacatlatoa* ('I speak forcefully').

<sup>16</sup> All the syllables of the word evenly, like *nitetlaçotla*, pronouncing these five syllables with the same voice, tone, and measure.

Table 2. Antonio de Rincón's two parameters and corresponding diacritics

Quantity	<i>Accentos</i>	<i>Caracteres</i>
Long	acute ( <u>not</u> in word final syllable)	'
	grave ( <u>only</u> in word final syllable) (without <i>saltillo</i> ) <i>predominante</i>	˘
short	with <i>saltillo</i>	˘
neutral	moderate	no diacritic mark ^

In the presentation of these *caracteres* and in his “*reglas .. para colocar los accentos*,” Rincón does not supply his examples with diacritics. Unfortunately, he only proposes the *caracteres*, but does not actually use them. In his discussion of “*la pronvnciacion y accento de la sillaba*,” he simply gives rules and explains in prose the prosody of a given word.

Thomas Smith Stark has suggested an explanation for this when stated that, “*acaso por representar una idea que le vino de última hora, que no se podía incorporar en la forma impresa, o tal vez debido a su enfermedad la cual no le permitió revisar su trabajo personalmente para incorporar su innovación*” (1996: 415).<sup>17</sup>

Another possible explanation for this may have to do with the simple problem of printing diacritics, a problem that Carochi mentions, “*conviniere acentuar las syllabas, como se hará en este Arte escrito de mano, que si se imprime no se podrá acentuar tan puntualmente por falta de caracteres*” (f 2v).<sup>18</sup>

In chapter two of his fifth book Rincón presents some rules for placing the *accentos*; I must emphasize that he here refers to speech production, and not to diacritics. The first rule repeats his general statement, confirms Olmos' and Molina's observations, and offers some background for his description. He says,

Nota que para la collocacion del accento no se a de mirar como en el latin solo vn accento predominante en la diction. por que en esta lengua todos los accentos que tienen las syllabas se pronuncian, y assi algunas vezes conforme a lo que la diction pide se hallan dos y tres, accentos predominantes semejantes o diferentes. v.g. *nicnonotza* tiene las dos primeras syllabas largas con accento agudo y ni mas ni menos [a couple of lines below he explains that *nic*, which represents inflectional prefixes, does not count, so the two syllables he is referring to are *nono*], *nicnonotzaya* fuera de tener el accento agudo en las dos primeras sillabas tiene en la penultima accento moderado, y todos se han de pronunciar y acontecera auer diction de cinco syllabas que tenga todas cinco diferencias de accento, cada vno en su sillaba v.g. *niclatlauhtitiaz* echando aparte el *nic*, que no entra en cuenta y tiene su accento breve por si, el primer *tla*. tiene accento largo agudo.

El segundo. *tla*, es breve; el primer *ti*, que es la tercera syllaba es el saltillo.

<sup>17</sup> Perhaps because it represents an idea that came to him at the last hour and which he could not incorporate into the printed form, or maybe due to his illness which did not allow him to revise his work personally in order to incorporate his innovation.

One should accent the syllables the way it will be done in this grammar written by hand; if it is printed, it will not be possible to accent as accurately due to lack of characters.

<sup>18</sup> One should accent the syllables the way it will be done in this grammar written by hand; if it is printed, it will not be possible to accent as accurately due to lack of characters.

El segundo. *ti*, que es la penultima tiene el accento moderado; la ultima que es el. *az*. tiene el accento graue. (265; f 65v-66r)<sup>19</sup>

Below are Rincón's examples, marked with his own diacritics, and in a phonetic interpretation:

(1) Rincón's diacritics	phonetic interpretation
<i>mílli, tílli</i>	mí: lli, tí: lli
<i>teòtl, ciuàtl</i>	teò: ʎ, siwà: ʎ
<i>mécâtl, çâcâtl</i>	mĕkăʎ, săkăʎ
<i>tláčolli</i>	ʎaʔsöllli
<i>nicnónótza</i>	niknó: nó: tsa
<i>nicnónótzâya</i>	nĭknó: nó: tsayă
<i>nictlátlauhtitiáz</i>	nikʎá: ʎăwtiʔtiá: s

With the last example Rincón wishes to demonstrate that - contrary to what is possible in Latin and Spanish — all five *accentos* can appear in one word.

In his third rule, Rincón has another allusion to the rules for Spanish and Latin word prosody. He writes,

Nota, que en las dictiones compuestas siempre o casi siempre las partes componentes guardan el mismo accento que tenian quando simples antes de entrar en la composicion, verbí gracia. *xochimecatl*, tiene dos accentos la. *o*. tiene el agudo, que tenia su simple. *xochitl*, y la, *e*, tiene el accento correpto, que tenia *mecatl*, antes de entrar en la composicion (265; f 66r-v).<sup>20</sup>

I suppose that with his reservation, *o casi siempre*, he alludes to the situation where a word with a long vowel in the final syllable enters into a compound as the first element whereby the vowel changes from *grave* to *agudo*, viz *ciuàtl* 'woman' vs. *ciuátótolin* 'turkey hen'; on pages 265-266; f 66v-67r he himself refers to precisely such a situation.

<sup>19</sup> Note that for the placement of the accent one should not see - like in Latin - only one predominant accent in the word because in this language all the accents that the syllables have are pronounced, and thus some times, in accordance with what the word requires, one finds two and three predominant accents alike or different, v.g. *nicnonotza* ['I give him advice'] has the two first syllables, long with the acute accent no less no more [a couple of lines below he explains that *nic*, which represents inflectional prefixes, does not count, so the two syllables he is referring to are *nono*], *nicnonotzaya* ['I gave him advice'] apart from the acute accent in the two first syllables has in the penultimate the moderate accent, and they all have to be pronounced, and it can happen that there are words with five syllables that have all the five differences in accents, in each its syllable, v.g. *nictlatlauhtitiaz* ['I shall go begging for it'] discarding the *nic*, which does not count and has its short accent as such, the first *tlá* has the long acute accent.

The second *tlá* is short; the first *ti*, which is the third syllable is the saltillo.

The second *ti*, which is the penultimate has the moderate accent; the final which is the *az* has the grave accent.

<sup>20</sup> Note that in compounded words the composite parts always or almost always retain the same accents that they had when they were simple, before they entered into the composition, v.g. *xochimecatl* [xōchimecatl 'string of flowers'], has two accents, *o* has the acute that its simple form, *xochitl* [xōchitl 'flower'] has, and the *e* has the brief accent that *mecatl* ['cord'] had before it entered into the composition.

What Rincón here observes is that vowel quantity in Nahuatl is an inherent property of the vowels in a given word, while two of what he calls *accentos* are determined — like stress in Spanish — by the position of the syllable, final or not, in the word, an observation which he was the first to describe.

My conclusion is that Rincón recognizes a phonemic distinction between long and short vowels and *saltillo* (glottal stop), but like his Franciscan predecessors, he is unable — or does not care — to identify one syllable in the word as more prominent than the others. His use of the terms acute and grave corresponds neither to Nebrija's understanding of these terms nor to that of today. Nebrija says, “ai enel castellano dos acētos simples: uno por el cual la silaba se alza: q̃ llamamos agudo. otro por el cual la silaba se abax̃a: que llamamos grave. como enesta dicion señor. la primera silaba es grave. τ la segūda aguda” (149; f 17v).<sup>21</sup>

Today's uses of grave and acute are confusingly different from that of Nebrija. *Diccionario de la lengua española de la Real Academia Española* defines them as follows:

Aplícase [grave] a la palabra cuyo acento prosódico carga en su penúltima sílaba, v. gr.: Mañana, imagen.<sup>22</sup>

Dícese [agudo] de la palabra cuyo acento prosódico carga en la última sílaba; v.gr.: maná, café, abril, corazón.<sup>23</sup>

Rincón, however, clearly uses the terms acute and grave to indicate tone height or pitch movement of long vowels which are tied to the position of the given syllable in the word and which are in complementary distribution, and these terms do not indicate phonemic distinctions in Rincón's description.

### 1.3. The Jesuit Horacio Carochi

In 1645 the Jesuit Horacio Carochi published the now most quoted and best known grammar of Classical Nahuatl. He was thoroughly familiar with Rincón's *Arte*, and his work owes much to his Jesuit predecessor. However, his description of word prosody in no way copies that of Rincón. Carochi has simplified Rincón's analysis by discarding the two parameters, quantity and *accentos*, and many of Rincón's detailed phonetic observations, and by dealing almost exclusively with phonemically distinct features. He uses diacritics fairly consistently to mark long vowels and *saltillo*; short vowels he marks only sporadically. The one exception to his marking of only contrastive phenomena is his way of treating the *saltillo* for which he has two diacritics: one for utterance internal *saltillos* and another for utterance final occurrences of *saltillo*. He has many detailed phonetic observations of his own, however, which are not found in other early grammars.

Where Rincón sets up two parameters for what he perceives: quantity (with three *maneras*, long, short, neutral) and *accentos* (acute, grave short, with *saltillo*, neutral) and a set

<sup>21</sup> There are in Spanish two simple accents: one by which the syllable is raised that we call acute; another by which the syllable is lowered that we call grave. Like in this word, señor, the first syllable is grave, and the second acute

<sup>22</sup> It [grave] is used about the word the prosodic accent of which is carried by the penultimate syllable, v. gr.: Mañana, imagen.

<sup>23</sup> It [acute] is said about the word the prosodic accent of which is carried by the final syllable, v. gr.: maná, café, abril, corazón.

of *caracteres* (diacritics), Carochi distinguishes only *generos de tonos*, which he indicates with *accentos*, i.e. in his terminology diacritic marks.

De quatro accentos vsaremos en este Arte para distinguir quatro generos de tonos con q̃ se pronuncia la vocal de cada syllaba, y son estos, á. ā. à. â el accento (´) es nota, y señal de syllaba breue como *tétl*, piedra: *tlétl*, fuego. La (˘) es accento de syllaba larga, como *āil*, agua: *Teāil*, Dios. La (ˆ) es señal de la pronunciacion q̃ suelen llamar saltillo, por que la vocal sobre que cae este accento se pronuncia como con un salto, ò singulto, ò reparo, y suspension: ver. gr. *tàtli*, padre: *pàtli*, medicina: *mōtli*, hardilla. Del accento (^) vsaremos solamente en las vltimas vocales ... quando no se pronunciare inmediatamente otra diccion (f 2r).<sup>24</sup>

In Rincón's system there is a one-to-one correspondence between the elements of his *accentos* (perceived distinctions) and his *caracteres* (diacritics); the same holds for the relationship between Carochi's *tonos* and his *accentos*.

Table 3. Comparison of Rincón's and Carochi's systems

RINCÓN	CAROCHI
quantity (short, long, neutral)	<i>generos de tonos</i> (quantity, <i>saltillo</i> )
<i>accento</i> (pitch, ± <i>saltillo</i> , <i>moderado</i> )	
<i>caracteres</i> (diacritics)	<i>accentos</i> (diacritics)

One basic difference between the two systems is that Carochi's *generos de tonos* do not include pitch, Rincón's acute and grave. This does not mean, however, that Carochi did not recognize pitch linked to long vowels in word final syllable. In a discussion of word final vowels he describes the long vowel with low pitch,

“Dixe que de ordinario son tan breues como se ha dicho: por que algunas ay, y son las menos que son largas mas que las vocales finales de las palabras Castellanas, y *ademas de ser largas se pronūcian en tono vajo como todas las demas syllabas finales largas aunque se acaben en consonante*. v. g. *icuihcā, apriessa ...*” (f 2v; emphasis mine)<sup>25</sup>

He is also aware of two other features that are linked specifically to utterance final position. The first — as already mentioned — he even explicitly indicates with his system of diacritics, namely the characteristic pronunciation of the *saltillo* in that position, see the quotation above.

<sup>24</sup> We use four accents in this grammar in order to distinguish four kinds of tones with which the vowel in every syllable is pronounced, and they are á ā à â. The accent (´) is mark and sign of a short vowel, as in *tétl*, stone: *tlétl*, fire. The (˘) is the accent for a long syllable, as in *āil*, water; *Teāil*, God. The (ˆ) is sign for the pronunciation that they customarily call saltillo (little jump) because the vowel on which this accent falls is pronounced like a jump or a hiccup or a hesitation and suspension, v. gr. *tàtli*, father; *pàtli*, medicine; *mōtli*, squirrel. The accent (^) we use only on the final vowels ... when no other word is pronounced immediately afterwards.

<sup>25</sup> I said that ordinarily they are as short as has been said, but there are some - and they are the fewest - which are longer than the final vowels in Castilian words, and in addition to being long, they are pronounced in a low tone like all the other final, long syllables even though they should end in a consonant, v.g. *icuihcā, apriessa ...* [‘quickly’].

His description of the actual pronunciation of this utterance final *saltillo* goes as follows, “*se pronuncie con fuerça, como quien va a pronunciar la aspiracion h. aunq̃ no es aspiracion; la qual no se puede dar à entender por escrito; sino que es menester oyrla pronunciar à los indios*” (f 2r).<sup>26</sup>

His second observation about utterance final position has to do with the quantity of short, final vowels,

Las demas vocales finales de nombres, y verbos singulares, y de otras partes de la oracion, se pronuncian de ordinario tan breues quando terminan el periodo, de manera que no se pronuncie inmediatamente tras ellas otra diccion, que à penas se tocan, quando se dexan. Pero si no terminan la oracion, sino que se le sigue otra diccion, ò dicciones se pronuncian como las vocales de la lengua Castellana (f 2v).<sup>27</sup>

By referring to this length distinction, linked to utterance medial versus utterance final position, I have elsewhere (Canger, 1990) suggested an explanation for why Spanish words that end in a vowel are consistently borrowed into Nahuatl with a final *saltillo*, the hypothesis being that when speakers of Nahuatl wanted to pronounce a Spanish word ending in a vowel, they had in their own language three possible pronunciations, long vowel, vowel accompanied by a *saltillo*, and Carochi's very short vowel that you “barely touch before you leave it.” And my suggestion is that the one with *saltillo* appeared to be the closest match, since the long one was too long and the short one was far too short.

Finally, it is worth observing that Carochi, like his predecessors, nowhere claims that one predictable syllable in a polysyllabic word is more prominent than the others. On the contrary, in a useful comment about moderate length, he describes all syllables as equal, “*quando vn bocablo es polisyllabo, y ninguna de sus syllabas es larga parecen todas medias, ni breues ni largas, como çacamecatl, sogá de esparto: cuyas quatro syllabas son todas breues, y por que son iguales entre si, parecen moderadas ni breues ni largas*” (f 3r-v).<sup>28</sup>

#### 1.4. Concluding on descriptions from the 16th and 17th centuries

An analysis of the descriptions found in the four early grammars leads me to conclude the following: Phonemically two features are supported by the descriptions:

- vowel quantity was phonemically distinctive
- saltillo* has a distinctive function.

The early grammarians also offer a good deal of information about the *non-contrastive* characteristics of Nahuatl word prosody of the time:

<sup>26</sup> It is pronounced with force as if one is going to pronounce the aspiration *h*. even though it is not aspiration; this cannot be explained in writing; but it is necessary to hear the Indians pronounce it.

<sup>27</sup> The other final vowels of nouns and verbs in singular and other parts of speech are ordinarily pronounced so briefly when they finish the utterance, in the sense that no other word is pronounced immediately after them, that they are barely touched when they are left. But if they do not close the utterance, but another word, or other words, follow it, they are pronounced like the vowels in the Castilian language.

<sup>28</sup> When a word is polysyllabic and none of its syllables is long, they all seem to be medium, neither long nor short, like *çacamecatl*, ‘cord of esparto grass’ whose four syllables are all short, and since they are equal among themselves, they appear moderate, neither short nor long.



- a) phonetic strong stress on the penultimate syllable of a polysyllabic word is not supported by the early descriptions; on the contrary, in spite of their search for it, several of them conclude that it is not there. Rincón, “Nota, que no es como en latin, que en siendo la diction dissilaba avnque sea la primera breue en la pronunciacion, le ponen accento agudo, como deus” (267; f 69v-70r).<sup>29</sup>
- b) Several phonetic features are linked to the final syllable of a word. A long vowel in the final syllable of a polysyllable is pronounced with low — or maybe falling — pitch. The other characteristics of the final syllable are phenomena that extend beyond the word, and are pertinent to utterance final position: a short final vowel is extremely short, and *saltillo* gives the preceding vowel an h-like pronunciation. Whether the low pitch on long syllables also forms part of the utterance intonation or whether it is limited to the morphological word is not clear; Carochi has no remarks that can help us resolve this question, and neither does his use of diacritics since his diacritics for vowel quantity are phonemic, and hold no information about pitch.

Careful reading of descriptions of Nahuatl from the 16th and 17th centuries has thus led me to conclude that vowel quantity was clearly contrastive, utterance final vowels were extremely short, the speakers did not exert extra force in the pronunciation of predictable syllables, and so no syllable carried more prominence than the others, but there were clearly observable pitch differences linked to long vowels and their position in the word.

## 2. Nahuatl word prosody in the 20th century

With a few exceptions, descriptions of word prosody in Nahuatl dialects in the 20th century are not nearly as detailed as those from the 16th and 17th centuries. Whereas the Franciscans and Jesuits focused their descriptions on vowel quantity and pitch, but had no comments on stress, most descriptions from the 20th century have a sentence or two on stress and nothing else. There are exceptions, however. I shall quote some of the less detailed before I go on to discuss the more detailed descriptions.

### 2.1. Penultimate stress

Tuggy describes Nahuatl as spoken in Tetelcingo, Morelos, “Stress is penultimate. The very rare exceptions are marked with an accent (´)” (Tuggy, 1979: 6). Lastra writes about Nahuatl spoken in Tetzaco, estado de México saying, “*El acento recae casi siempre en la penúltima sílaba y se señala si se da en otra posición*” (Lastra, 1980: 9).<sup>30</sup> Beller and Beller describe Nahuatl as spoken in La Huasteca writing, “Stress is on the penultimate syllable except for a few rare exceptions. In these exceptions stress will be written” (Beller and Beller, 1979: 205). Campbell writes about Pipil in El Salvador saying, “Stress falls on the penultimate syllable,.. Since accent (stress) is predictable in this position, it is marked formally in the spelling only in those few exceptions where it does not appear in the penultimate syllable. These cases, however, are very rare” (Campbell, 1985: 28). Canger (1974) writes about Nahuatl as spoken in Zitlala, Central Guerrero [My translation of original text in Danish], “Normally the accent falls

<sup>29</sup> Note, it is not like in Latin where if a word is disyllabic, even if the first has a short pronunciation, they give it an acute accent, like *deus*.

<sup>30</sup> The accent almost always falls on the penultimate syllable, and it is indicated if it occurs in another position.

on the penultimate syllable, but it is not strong, and in connected speech it often seems to be the case that all syllables are accentuated equally” (1974: 3).

### 2.2. Predictable stress

Some descriptions reveal that the stress pattern — even though predictable — is less simple.

Brockway says about Nahuatl in Tlaxpanaloya, North Puebla, “Stress is penultimate except when a syllable drops out in contraction” (1979: 145).

Nahuatl as spoken in the Tehuacan-Zongolica region has received considerable attention: In 1990 Cristina Monzón published a monograph with the title, “Registro de la variación en el náhuatl moderno” in which she, in fact, limits the area of study to La Sierra de Zongolica. About stress she says,

En la zona Zongolica no se conserva la regularidad accentual del náhuatl clásico. Si bien el acento recae en forma predominante en la penúltima sílaba, hay ya un gran número de palabras que se acentúan en otras posiciones. El acento esdrújulo en general se puede predecir, ya que afecta a sustantivos con el absolutivo o a los verbos en tiempo pasado. El acento agudo sólo es predecible en las formas verbales con los sufijos *-lia* y *-tia* a condición de que haya pérdida de la vocal *a* (Monzón, 1990: 73).<sup>31</sup>

But Monzón does not claim phonemic status for the accent, “El número de excepciones a la regularidad acentual sugiere una inestabilidad que en este momento no permite ver con claridad cuál es el estatus fonémico del acento” (Monzón, 1990: 73).<sup>32</sup>

In writing about the same general dialect area, Tuggy has the following comment,

La acentuación del náhuatl es siempre penúltima (grave), es decir se acentúa la sílaba anterior a la última de la palabra. .. Por lo tanto, las palabras con acento penúltimo no llevarán acento escrito. Algunas variantes, entre ellas la de Orizaba, tienen palabras con otro acento: esas sí se representarán con acento escrito (p.ej. *pakílistli alegría*, *ihkón así*) (Tuggy, 1991: 3).<sup>33</sup>

Andrés Hasler H. gives a more detailed description of how accentuation in that area differs from the “penultimate standard”.

En todas las áreas dialectales del náhuatl, el acento de palabras de más de una sílaba recae, mecánicamente, en la penúltima sílaba. Asimismo, encontramos un número reducido de palabras acentuadas en la vocal final ... Como excepción, toda la región de

<sup>31</sup> In the zone of Zongolica the regularity of accent in Classical Nahuatl is not preserved. Even though the accent predominantly falls on the penultimate syllable, there are now a great number of words that are accented on other syllables. Accent on the antepenultimate syllable can generally be predicted, since it affects nouns with the absolutive or verbs in the past tense. Accent on the final syllable is predictable only for verb forms with the suffix *-lia* and *-tia* provided that there is loss of the vowel *a*.

<sup>32</sup> The number of exceptions to the regularity in accentuation suggests an instability which right now does not permit one to see clearly what the phonemic status of the accent is.

<sup>33</sup> Accentuation in Nahuatl is almost always penultimate (grave), that is the syllable preceding the final one of the word is accented. Therefore, words with the accent on the penultimate do not have a written accent. Some [language] varieties, among them that of Orizaba, are accented differently: those are indicated with a written diacritic (e.g. *pakiliztli joy*, *ihkón thus*).

Tehuacán-Zongolica tiene el rasgo propio y distintivo del acento esdrújula en un conjunto bien definido de palabras. (Hasler, 1996: 45).<sup>34</sup>

He goes on to present, exemplify, and discuss four configurations that condition stress on the antepenult (Hasler, 1996: 45).

The accentuation in Nahuatl as spoken in Mecayapan, Veracruz is described by Carl Wolgemuth, but since his description deals solely with how stress is indicated in writing, he has no overall statement about stress. However, it emerges clearly that stress occurs primarily on the penultimate syllable, but is also found on the final syllable, in some cases due to contraction. In addition he gives examples of stress on the antepenultimate and on the antepenultimate, examples about which he says, “Todos los ejemplos de palabras esdrújulas y sobresdrújulas llevan pospuestas una o más partículas de enclítico” (1981: 12).<sup>35</sup>

So far we have looked at descriptions that deal exclusively with questions of stress assignment, and the general conclusion is that stress is predictable, in some cases with a single rule, and in others it requires a few more rules.

### 2.3. Descriptions of pitch patterns

In his analysis of prosodies of Nahuatl in Milpa Alta and Tepoztlan, Whorf (1946, 1993 [written in the 1930s]) includes syllable and word structure, pitch tone, stress accent, and vowel quantity.

In the detailed description of phonetic pitch tone (1993) he relates tone to word structure. He discusses medium, slightly raised, and high tone. He finds that in Milpa Alta the penultimate syllable of words ending in a vowel (-CVCV) has a slightly raised falling tone; in words ending in a consonant (-CVCVC) the penultimate syllable has a high tone; and the final syllable has a low tone if the penultimate syllable has a high tone (Whorf, 1993: 174). In Tepoztlan, however, the penultimate syllable has a raised falling tone if the vowel is long and a high tone if it is short, and in the latter case the final vowel has a low tone (1993: 198-99).

(2) Milpa Alta	-CVCV	penultimate syllable: raised falling tone
	-CVCVC	penultimate syllable: high tone
	-CVCVC	final syllable: low tone
Tepoztlan	CV: CV(C)	penultimate syllable: raised falling tone
	CVCV(C)	penultimate syllable: high tone, final syllable: low tone

All other syllables have medium tone in both dialects.

In other words, in Milpa Alta Whorf's pitch tone depends on the syllable's position in relation to the end of the word, penultimate vs. final, and on whether the final syllable is open or closed, whereas in Tepoztlan the quantity of the vowel in the penultimate syllable is crucial, and whether the final segment in the word is a consonant or a vowel, is unimportant.

<sup>34</sup> In all Nahuatl dialect areas the accent on words of more than one syllable falls mechanically on the penultimate syllable. Likewise, we find a number of contracted words accentuated on the final vowel ... As an exception the whole region of Tehuacán-Zongolica has the characteristic and distinct feature of the accent on the antepenult in a well defined category of words.

<sup>35</sup> All the examples of words with accent on the antepenultimate and the antepenultimate have one or more of a type of suffixed enclitics.

Apart from this comment on Tepoztlan, the role of vowel quantity is given little attention in the article from 1993 [written in the 1930s] which deals specifically with “pitch tone and the ‘Saltillo’.” The following comments are found in the later article from 1946:

Vowels are “inherently” (morphophonemically) either short or long, and these lengths are maintained in actualization regardless of position in the word, subject to the following minor alterations: 1) a primary-accented long vowel tends to lose some of its length, especially in rapid speech (though on the contrary long vowels *without* primary accent tend to compensate for their lack of accentual prominence by holding their length well); 2) a primary-accented short vowel is slightly lengthened; ...Because of the confusing effect of (1) and (2) to a nonnative, it cannot be guaranteed that vowel length is always correctly shown in this sketch, (Whorf, 1946: 370).

About stress accent he says, “Stress accent is indicated by underlining the vowel: ko: mitl It is not strong.” (Whorf, 1993: 173). In the article from 1946 we learn that, “MA [Milpa Alta] has a stress accent with associated pitch differences. Words over one syllable have primary accent on the penult. This accent consists of loud stress together with one of two varieties of tone-pattern” (Whorf, 1946: 369). And he goes on to describe what was already quoted above. Later he states that, “A word is a prosodic entity in MA, word division always being clear from the penultimate accent” (Whorf, 1946: 370).

About *saltillo* he says that, “In M[ilpa Alta] where even a faint glottal stop to represent the saltillo may have disappeared, the difference in tone pattern between a vowel-ending and a consonant-ending word may remain the only difference” (Whorf, 1993: 187).

To sum up: Whorf recognizes primary stress on the penult, but says it is “not strong.” Vowel length distinctions are in many cases difficult to hear. His pitch tone is in Milpa Alta not connected with vowel quantity, but only to position in the word — and in some cases to former *saltillo*; in Tepoztlan, however there is a certain interrelationship between pitch tone and vowel quantity. This last observation reminds us of Rincón's description, but in Rincón's the quantity of the vowels was part of the pattern everywhere.

In a thorough description of “Puebla (Sierra) Nahuatl Prosodies,” Dow F. Robinson finds a pattern that is even closer to that of Rincón's. He says,

The following examples show relative pitch levels for vowels which are short or long and the vowels which are stressed or unstressed. Etc pitch is marked from 1 - high to 5 - low for each vowel.

<i>iin šokot</i> , pitches	2-3 1 4
<i>iin koneet</i> , pitches	2-3 1 4-5
<i>iin šoočit</i> , pitches	2-3 2-3 4
<i>iin ooloot</i> , pitches	2-3 2-3 4-5

It is therefore the thesis of this paper that, in addition to length and accent, pitch is structurally relevant in SN (Robinson, 1969: 16).

We here see how pitch of both the penultimate and the final syllable depends on the length of the vowels: Long vowels have rising (2-3) and falling (4-5) pitch, respectively, whereas short vowels have either high or low vowels.

2.4. Word prosody in Nahuatl of San Agustín de Buenaventura

In one dialect, spoken in the state of Durango, word prosody seems to be significantly different from that of most other dialects spoken today. My work with this dialect has taken place in only one community, San Agustín de Buenaventura. The role of stress in that dialect I have written about in an article, published in 2000, of which the following is a summary.

Due to syncope of the final vowel a number of inflected words have word stress on the new final syllable, and thereby the assumption of penultimate stress is altered. This is the case both in the nominal and the verbal systems, and a pattern of inflected nouns and verbs can be established where word prosody has a function other than that of contributing to the identification of words. Based on the morphology four noun categories can be established:

		Singular		Plural
		Non-Poss	Poss-1sg	
(3) Class 1	'tortilla'	<i>taʃkal</i>	<i>no-ʔaʃkal</i>	<i>(no)taʃʔkal-me</i>
	'bow'	<i>tawiʔol</i>	<i>no-taʔwitol</i>	<i>(no-)tawiʔol-me</i>
Class 2	'woman'	<i>ʃiwa-t</i>	<i>no-ʃiwa-t</i>	<i>(no-)siʔwa-m</i>
	'fresh corn'	<i>ʔelo-t</i>	<i>no-ʔelo-t</i>	<i>(no-)eʔlo-m</i>
Class 3	'arrow'	<i>ʔmiti</i>	<i>no-ʔmiti</i>	<i>(no-)miʔti-m</i>
	'bee'	<i>ʔnexti</i>	<i>no-ʔnexti</i>	<i>(no-)nexʔti-m</i>
Class 4	'fish'	<i>ʔmitʃi</i>	<i>no-ʔmitʃi</i>	<i>(no-)miʔʃi-m</i>
	'dog'	<i>ʔpelo</i>	<i>no-ʔpelo</i>	<i>(no-)peʔloh-me</i>

It takes little familiarity with Nahuatl morphology to see what has happened here: the old system has lost out, and the speakers have created a new and perfectly regular system. Class four is where I have placed all the odd ones, loan words, etc., but for the other nouns the stress pattern can be reduced to two simple rules:

- a) Nouns that end in -l (class 1) are assigned final stress when are nonpossessed, but have stress on the penult when possessed and in the plural.
- b) Nouns of classes 2 and 3 have stress on the final syllable when in the plural, as opposed to the singular form where stress is on the penult.

This stress pattern collaborates with the morphology: “singular” has two allomorphs, zero and -t, and “plural” also has two, -me and -m. The complementary distribution of the two allomorphs for “plural” is simple, and it is neatly correlated with the stress pattern; in the case of the two allomorphs for “singular” the distribution is more complicated, however.

Since the verbal inflection in general is more complex than that of the nouns, the patterns are also more complex, and here stress assignment not only forms a pattern, stress also acquires a clearly contrastive function.

(4)	<i>Ø-ʔwetska</i>	'he laughs' (pres)	<i>Ø-wetska</i>	'he laughed' (impf.)
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Again, a historical analysis will uncover the processes behind such a pair, and in many cases — not in the one here exemplified — there are variant forms that give the speakers access

to some of these processes. However, stress clearly does far more than identify words as such; it contributes to the morphological patterns.

Due to the many cases of word final stress — in a short narrative text containing 180 words of two or more syllables, I have counted 72 words (i. e. more than one third) with stress on the final syllable — Nahuatl of San Buenaventura gives a very different superficial impression from that of Nahuatl dialects where stress falls predictably on the penultimate syllable.

2.5. Summary of Nahuatl word prosody in the 20th century

Most dialects spoken today have predictable stress, either on the penultimate syllable or primarily on the penultimate and on other syllables according to simple rules. Some descriptions indicate that the stress accent is not strong. Vowel quantity is mostly ignored. A few scholars have described pitch patterns not unlike that of Rincón. One dialect, that of San Agustín de Buenaventura, stands out: 1) because it has no vowel quantity distinction and 2) because stress forms part of certain morphological systems.

3. Prosody of words borrowed from Spanish

Speakers of Nahuatl have since the 16th century borrowed a great many Spanish words. In the early period, segmental phonemes foreign to these speakers' ears were adapted to better-known Nahuatl sounds. Undoubtedly, these borrowed words were also pronounced with Nahuatl prosody. No grammarian from the 16th and 17th centuries dealt specifically with such loan words. However, the speakers adapted not only the segmental phonology to their own language, but also word prosody, and I claim that this pronunciation, quite distinct form that of Spanish speakers can still be detected in the shape these loan words have in dialects spoken today. In this analysis of loan words I distinguish between old loans and more recent or contemporary loans. In the old loans we find some consistent features:

- a) syllables that are stressed in Spanish are in Nahuatl rendered with a long vowel.
- b) stress assignment generally corresponds to that of Spanish — if it is penultimate.

(5)	Spanish	Nahuatl of Tacuapan	
	ca'ballo	<i>kaʔwa:joh</i>	'horse'
	ca'misa	<i>kaʔmi:sah</i>	'shirt'
	can'dela	<i>kanʔde:lah</i>	'candle' (Canger, 2005)

However, if the Spanish words have stress on the final syllable, Nahuatl has in most cases not taken over the Spanish model, but the borrowed words have stress on the penultimate, thereby following the general rule for stress assignment in most dialects of Nahuatl of today,

(6)	Spanish	Nahuatl of Tacuapan	
	cotón	<i>ʔkoto:n</i>	'poncho'
	costal	<i>ʔkofa:l</i>	'sack'
	tomín	<i>ʔtomi:n</i>	'money'

almud	'almo.n	'almud'	
azadón	'salo.n	'hoe'	
rúbrica	rru.b'rikah	'signature'	(Canger, 2005)

These loans have all entered Nahuatl in an early period, and more recent loans retain the Spanish stress pattern,

(7) Spanish	Nahuatl of Tacuapan	
ciudad	siw'dad	'city'
cordón	kor'do:n	'cord'
mesón	me'son	'inn'
		(Canger, 2005)

I explain the pattern for the early loans as follows: it is obvious that the speakers of Nahuatl perceived the stressed syllable in Spanish as different from the other syllables, and it is likely that it was — and is — a bit longer than the unstressed syllables. As a consequence they pronounced it long, but apart from that they pronounced it the way they would have pronounced any Nahuatl word, without giving prominence to any one syllable. Over the centuries when their word prosody gradually changed under the influence of Spanish, they adopted the feature of stress on the penultimate syllable for all words, and thereby these early loan words received stress on the penultimate just like all the other words in the language.

#### 4. General perspectives and concluding remarks

The development that I have sketched claims that three stages of Nahuatl word prosody can be established:

1. In Nahuatl of the 16th and 17th centuries vowel quantity (short vs. long) was a highly characteristic feature of the language that served to distinguish individual words and to mark the end of utterances (extremely short vowel). The long vowels were accompanied by high or low pitch depending on their position in the word, a feature that thus served to identify not individual words, but word boundaries.
2. In most dialects of the 20th century a predictable strong stress falls on the penultimate syllable. I believe that these dialects also differ significantly from those of the 16th and 17th centuries in one more respect: the quantity distinction that was strong in stage 1 is far less conspicuous today. Almost no descriptions of present-day Nahuatl dialects indicate vowel length; and yet in my own work with many dialects, I have come across only one for which I can say with certainty that distinctions of vowel quantity no longer exist. That is precisely the situation in Durango where the third stage applies.
3. In San Agustín de Buenaventura stress is incorporated into the morphological patterning, it contributes to distinguish — or at least supports in the identification of — inflected nominal and verbal forms. The default position of stress is — like in other dialects of the 20th century — the penultimate syllable.

The development of the three stages that I have sketched naturally leads one to ask why languages change and why they change the way they do? More narrowly, why have speakers of Nahuatl changed from speaking in a way that clearly sounded very different from what we hear today, and why have some carried this process further? Will the other dialects follow suit — if they are given enough time?

The answer is almost too simple: the change is due to Spanish influence. Spanish has no quantity distinction. We have Nebrija's word for trusting that this was true already in the 15th century; Spanish has, as a default rule, stress on the penultimate syllable; stress plays a role in the system of verbal morphology, viz. *tómo* 'I take' vs *tomó* 'he took', so the change seems to have brought Nahuatl word prosody ever closer to that of Spanish. But how about universal tendencies, do they corroborate the changes that have taken place, or are the changes unexpected and in disagreement with universal tendencies? If the latter were true, we would have a strong case for claiming that this is an example of change through contact.

In a study from 1977 "On the Nature of Linguistic Stress" Larry M. Hyman gives discusses what a stress language is, stress-placement, syllable weight, and the origin of stress. Based on a study of stress-placement in 444 of the world's languages he finds that, "300 show a dominant initial, second-syllable, penultimate or final stress-placement. Six languages have been found with dominant antepenultimate stress, nine with syllable weight stress and 16 with no stress-accent and no tone" (1977: 56). In other words, the lack of stress in Nahuatl of the 16th and 17th centuries is not unique; there are other languages that function without word stress, but it is highly uncommon.

Of the 300 languages with predictable stress, Hyman has found that 114 have dominant initial stress, 97 with dominant final stress, 77 with dominant penultimate stress, and only 12 with dominant second syllable stress. Hyman also calls predictable stress demarcative because it signals a word boundary, and he argues that initial and final stress are the preferred positions since, "the closer stress falls to that boundary, the better it will fulfill its linguistic function." (1977: 41). About the penultimate stress he says that, "The penultimate position, while it is equally distant from a boundary as is the second syllable, is a much more natural place to put stress" (1977: 41). Apart from "its great frequency in the world's languages" he presents a number of examples that show a strong tendency to move stress to the penultimate syllable, and he also argues that "since pitch-change is the most effective cue of stress-prominence, languages will tend to assign stress to those positions where a pitch-change will be most perceptible" (1977: 42).

The last change in Nahuatl word prosody is also supported by Hyman's study. In his discussion of the origin of unpredictable stress, he says, "Other mechanisms by which predictable stress becomes unpredictable include the loss of unstressed vowels" (Hyman, 1977: 41). And that is precisely what has happened in Nahuatl of San Buenaventura.

The proposed reason for the change in Nahuatl is thus in no way a strong case for contact-induced change, but it still seems to me to be the first explanation that comes to mind. From being a rare language with no dominant stress, it enters a numerous group of languages with a more perceptible stress on the penultimate syllable, and the final step brings it close to Spanish with no vowel quantity and a stress pattern like that of Spanish.

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