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TETELCINGO
[Illegible]

The Phonology of ow-a and iy-a Verbs
in Tetelcingo Aztec

by David Tuggy

A-1 - Class. III
Nov 1979

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The Phonology of ow-a and iy-a Verbs
in Tetelcingo Aztec

The largest class of verbs in Tetelcingo Aztec, those which end in ow-a or iy-a, presents some interesting problems for phonological analysis.^{1 2} What appears to be the most economical account of them

¹Tetelcingo Aztec is spoken in the village of Tetelcingo, in the Municipio of Cuautla, Morelos, México, and in two colonias, Colonia Cuauhtémoc and Colonia Lázaro Cárdenas, which adjoin the town of Tetelcingo. There may be as many as 3000 speakers, most of whom are bilingual and many of whom are more proficient in Spanish. Tetelcingo Aztec differs from other Aztec dialects in having converted vowel length distinctions into tenseness distinctions, and in the extensiveness of its honorific system.

Previous work was done on Tetelcingo Aztec by Richard S. Pittman and Forest and Jean Brewer, of the Summer Institute of Linguistics. I would like to acknowledge my indebtedness to them, and to the native speakers of Tetelcingo Aztec who have taken the time to teach me their language, especially Trinidad Ramirez Amaro.

²Examples for this paper are cited in an alphabet reflecting the Aztec phonemic system as unaffected by Spanish loans. Square brackets ([]) are occasionally used to mark a more phonetic citation. The letters are pronounced pretty much as one would expect, with the following provisos: ɨ is IPA [ɨ], or i in English bit. ie is a unit phoneme, pronounced [ye] or [iê]. c is the alveolar affricate [ts]. tl is a completely voiceless unit phoneme. ɥ is in most environments a diphthong or glide between o and a, phonetically sort of an [ôa]. o tends to be pronounced ɥ around velars and h, and especially when initial and stressed. For some (especially younger) speakers it coalesces with u in these positions. l (and often r) is voiceless preconsonantly or word finally (i.e. in syllable final position.) r is as in Spanish. w is labial ([b]) preceding front vowels and voiceless following voiceless consonants (including devoiced l or r). (Perhaps the most serious effect of Spanish loans on the Aztec phonemic system has been the introduction of words with [b] before back vowels.) All words except a few loans have penultimate stress. When it is relevant to write stress I will use ˈ for primary and ˌ for secondary stress, preceding the syllable whose vowel is stressed. The very common verbal termination iya is pronounced ['e^ya] by most speakers.

b, d, g, and f appear in loans. r probably originally was a loan, but it now appears in definitely native words, displacing l at times. l also sometimes displaces historical r in borrowed words.

Syllables, except in a very few loan words, are only V, CV, VC, or CVC. Thus only medial consonant clusters occur, and they are never bigger than CC. (There is a conspiracy of phonological rules to assure this.)

The vowel system consists of eight vowels very neatly distinguished

causes problems in the analysis of other classes of verbs. In this paper I would like to discuss alternative analyses of these verbs and the problems and implications of each.

In Section 1 I will describe the relevant classes of verbs and motivate certain relevant phonological rules. Section 2 will deal with the analysis of Class III verbs, the iy-a and ow-a verbs. Section 3, building on this analysis, will deal with two subclasses of Class II which parallel Class III in several ways. Section 4 will take up the analysis of Class IV verbs, which also parallel Class III verbs, and Section 5 is the conclusion.

1. Preliminaries

1.1 Verb Classes

For the purposes of this paper it will be useful to divide Tetelcingo Aztec verbs according to the ways they form their pret sg forms.³

by three features: +/- front, +/- high, and +/- tense. The tense vowels correspond to long vowels in Classical Aztec and in other modern dialects.

| | +tns | | -tns | |
|-------|--------|--------|--------|--------|
| | +front | -front | +front | -front |
| +high | i | u | ɨ | o |
| -high | ie | ɥ | e | a |

³The following abbreviations are used in this paper, mainly in giving morph-eme by morph-eme glosses and in writing rules:

| | | | |
|--------|------------------------|-------|-------------------|
| abs | 'absolutive' (note 9) | pl | 'plural' |
| adj | 'adjectiv(al)' | possd | 'possessed' |
| applic | 'applicative' (note 8) | pres | 'present' |
| BF | 'basic form' (note 6) | pret | 'preterite' |
| caus | 'causative' | prtcp | 'particip(ial)' |
| dub | 'dubitative' | rdp | 'reduplicat(ion)' |
| dur | 'durative' | refl | 'reflexive' |
| fut | 'future' | sg | 'singular' |

dim.
"diminutive"

1.1.1 Class I verbs

Class I verbs are those which take a -k to mark the pret sg forms. An example of this class of verb is maka 'give'. Representative forms of maka are given in Table 1.

In addition to verbs like maka, which end in a, Class I also includes some verbs like así 'arrive', which end in í.

1.1.2 Class II verbs

Class II verbs are those which undergo truncation to form the pret sg forms. This truncation also takes place before a certain class of suffixes. (See the discussion of Preterite Stem Formation in section 1.2.2) An example of this class of verb is keca 'stand'. Representative forms of keca are given in Table 2.

| | | | |
|--------|-----------------------|--------|--------------------------------------------|
| hon | 'honorific' | str | 'stress(ed)' |
| immed | 'immediative' | 2str | 'secondary stress' <i>thou '2 pers sg'</i> |
| impf | 'imperfect(ive)' | tns | 'tense' |
| intrns | 'intransitive' | trns | 'transitive' |
| irr | 'irrealis' | trnsr | 'transitivizer' |
| nr | 'nominalizer' | unspec | 'unspecified object' |
| obs | 'obstruent' | UF | 'underlying form' (note 6) |
| pers | 'person' | vr | 'verbalizer' |
| 1 pers | 'first person' (etc.) | | |

Also various more or less standard abbreviations from generative phonology will be used. Among the less standard of them are \$ for syllable boundary and # for stem boundary. Certain of the rules' names will be abbreviated at various times. These abbreviations will either be introduced in the text or, at least hopefully, be self-explanatory. Two which will be used quite frequently are PSF for Preterite Stem Formation (1.2.2) and FRD for Final Resonant Deletion (1.3.1).

Stems will be cited in the 3 pers sg pres form minus any affixes. 'He' and 'him' will be used in the glosses for 3 pers sg, not necessarily from any sexist bias. The Tetelcingo Aztec culture has such a bias, but the structures of the pronominal and verb agreement systems do not reflect it. When the 3 pers sg form most naturally refers to an inanimate entity, I will use 'it' as the gloss.

⁴The #o- 'past' morpheme is a wierd one. It can appear on pret or impf forms and sometimes on contingent or dubitative forms. In most of those cases it is fairly optional. There is some evidence that it is not as strongly bound to the stem phonologically as other prefixes:

Table 1
Class I verbs

| | | | |
|------------------------------------------------|--------------------------|----------------------------------------------|-------------------|
| ki-maka him-hit | 'he hits him' | ki-maka-k ⁴ him-hit-pret sg | 'he hit him' |
| ki-maka-ki him-hit-pl pret | 'they hit him' | ki-maka-s him-hit-fut | 'he will hit him' |
| ki-maka-ya him-hit-impf | 'he was hitting him'' | ki-maka-lo him-hit-hon | 'he hon hits him' |
| to-mo-maki-liy-a thou-refl-give-applic-pres | 'you hon sg hit him' | | |

under one analysis its presence does not count in reckoning CVC patterns for conditioning an epenthesis. With one-syllable preterite verbs it is mandatory (and it receives stress), and it is usually strongly indicated for two-syllable verbs that can have it. (There is a conspiracy to avoid one-syllable nouns and verbs.) on- sometimes seems to be an alternative spelling, often confusable with on- 'hence/immed' (which also participates in the conspiracy).

Table 2
Class II verbs

| | | | |
|-------------------------------------------------------------------|-------------------------|------------------------------------------------|--------------------|
| ki-keca it-stand | 'he stands it | o-ki-kec past-it-stand ⁴ pret | 'he stood it' |
| ki-kec-ki it-stand-pl pret pret | 'they stood it' | ki-keca-s it-stand-fut | 'he will stand it' |
| ki-keca-ya it-stand-impf | 'he was standing it' | ki-keca-lo it-stand-hon | 'he hon stands it' |
| to-mo-ke <i>ɛ</i> i-l <i>ɛ</i> y-a thou-refl-stand-applic-pres | 'you hon sg stand it' | | |

Class II is the most numerous class of verbs in the language, after Class III. In addition to verbs like keca which end in a, Class II includes many verbs which end in i. It is possible to tell in most cases by the phonological shape of the stem whether a verb will be in Class I or Class II, but not always.⁵

1.1.3 Class III verbs

Class III verbs are those whose stems end in -ow-a or -i-y-a. I will refer to those which end in ow-a as Class IIIo verbs, and those

⁵One syllable stems do not truncate (e.g. k^w_i 'grasp', ka 'be', k^w_a 'eat', i 'drink' (see section 3, esp. note 60)). Neither do stems ending in CCV (e.g. hta 'see', teriksa 'kick', ɛ*h*ɛa 'spit'). (These facts are involved in conspiracies to avoid 1-syllable verbs and CCC configurations.) Also, almost no stems ending in ka, (ga), tla, sv, or k^w_v truncate. But there are exceptions to this last rule. Sometimes it even happens that two verbs having the same root will behave differently with respect to preterite formation. For instance, m-ihyu-cak^w_a (refl-breath-close) 'he suffocates', m-ihyu-cak^w_a-k 'he suffocated', but ki-cah-cak^w_a (him-rdp-close) 'shuts him up (in jail)', ki-cah-cak 'he shut him up'. Some forms can opt for either method: e.g. ki-pah-paka (it-rdp-wash) 'he washes it', ki-pah-pak or ki-pah-paka-k 'he washed it'. Verbs ending in -tiya 'inchoative' also take -k.

which end in iy-a as Class III \dot{z} verbs. Examples of these verbs are htow-a 'say' and lwi-y-a 'tell'. These verbs will be discussed at length in Section 2. Representative forms are given in Table 3.

All (and only) verbs ending in ow-a and iy-a are in Class III, but there are verbs ending in owa and iya which are not in Class III. Examples are kowa 'count' (Class II) and verbs ending in -tiya

Table 3
Class III verbs

| III \circ | | III \dot{z} | |
|------------------------------------------------|-------------------------------|-----------------------------------------------|-----------------------------------|
| ki-htow-a it-say-pres | 'he says it' | ki-lwi-y-a him-tell-pres | 'he tells him' |
| o-ki-hto past-it-say | 'he said it' | o-ki-lwi past-him-tell | 'he told him' |
| o-ki-htoh-ki past-it-say-pl pret | 'they said it' | o-ki-lwih-ki past-him-tell-pl pret | 'they told him' |
| ki-htu-s it-say-fut | 'he will say it' | ki-lwi-s him-tell-fut | 'he will tell him' |
| ki-htow- \dot{z} -ya it-say-pres-impf | 'he was saying it' | ki-lwi-y- \dot{z} -ya him-tell-pres-impf | 'he was telling him' |
| ki-htu- \dot{z} -ya | '(same in careless speech) | ki-lwi- \dot{z} -ya | '(same in less careful speech) |
| ki-htu-lo it-say-hon | 'he hon says it' | ki-lwi-lo him-tell-hon | 'he hon tells him' |
| to-mo-hta-lwi-y-a thou-refl-say-applic-pres | 'you hon sg say it' | | |
| to-mo-lwi-li-y-a thou-refl-tell-applic-pres | 'you hon sg tell him' | | |

'inchoative' (Class I). It is not possible to tell from the surface phonological shape of any one form of a verb whether it is in this class or not.

1.1.4 Class IV verbs

Class IV is a very small class of verbs; eight forms and their derivatives that I know of. They all end in a in the present tense form. An example of these verbs is k^wa 'eat'. These verbs will be discussed at length in Section 4. Representative forms are given in Table 4.

1.2 Basic Rules

Two rules of Tetelcingo Aztec phonology are exemplified in the data in Tables 1-4 which are quite basic to all the discussion that is to follow. They are Deactivation and Preterite Stem Formation (PSF).

1.2.1 Deactivation

Table 4
Class IV verbs

| | | | |
|---------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|---------------------|
| ki-k ^w a it-eat | 'he eats it' | o-ki-k ^w a past-it-eat | 'he ate it' |
| o-ki-k ^w a-k past-it-eat-sg pret | 'he ate it' (some, chiefly younger, speakers) | o-ki-k ^w ah-ki past-it-eat-pl pret | 'they ate it' |
| ki-k ^w ā-s it-eat-fut | 'he will eat it' | ki-k ^w ā-ya it-eat-impf | 'he was eating it' |
| k ^w a-lo eat-hon | 'he hon eats it' | to-mo-k ^w a-ltiy-a thou-refl-eat-caus-pres | 'you hon sg eat it' |

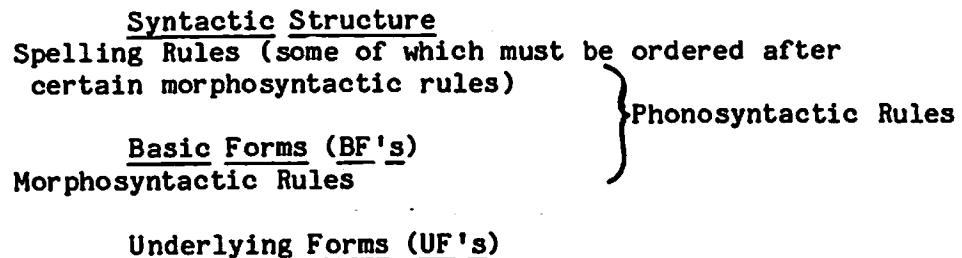
Only one phonological alternation is observable in the data in Table 1. It is the change of stem from maki in the form tomomakiliya to maka in all the other forms. This alternation is most easily described as resulting from the operation of a morphosyntactic rule⁶

⁶The model of phonology I will be using is a slightly modified version of that taught me by Richard Rhodes. Perhaps its most basic assumption is what is called the Collapsing Hypothesis, which states that all cases of a single process must be expressed in a single rule, and that only one process should be expressed in any given rule. This model also assumes the existence of a body of Natural Processes innate to all human speakers. Rules that directly reflect these natural processes are natural rules. Naturalness of rules is one of the criteria for distinguishing allophonic from morphophonemic rules.

The model works as follows: Basic Forms (BF's) are fed through a series of ordered rules to produce the surface (for our purposes a fairly early post-phonemic) form. The output to any rule serves as the input to the following rule. The rules are divided into three large classes, which follow each other. The first rules to operate are the phonosyntactic rules. This category comprises spelling (lexical insertion) rules, which provide the basic phonological material (BF's) for the other rules to operate on, and morphosyntactic rules, which make changes in already spelled forms, but whose motivating environment is mainly syntactic or morphological and not phonological. The output of the phonosyntactic rules is the Underlying Form (UF). The next rules to apply are the morphophonemic rules, which make changes affecting the phonemic shape of words and whose motivation is largely phonological. The output of the morphophonemic rules is the phonemic form. The last group of rules to apply is the allophonic rules, including fast and sloppy speech rules, which change the phonemic form to the phonetic form.

"Phonemic", as used herein, is not exactly the same as in the classical usage. The main difference is that allophonic rules are allowed to neutralize forms, which makes the phonemic level rather more abstract than it was classically. Another way to say the same thing is that we are holding to a "univalent" rather than a "biunique" phoneme. Among the requirements for a rule to be allophonic are that it be general (not subject to exceptionality) and natural.

For a more complete explanation of these and other complexities of the model, see Rhodes (1973, 1974a, 1974b).



changing a basic a to ɨ⁷ before the applicative -liy.⁸ A comparison with other verbs in the same class shows that this change also takes place before the nominalizer -lis. For instance, tla-pah-päka (unspec-rdp-wash) 'washes things', tla-pah-päki-lis-tli (unspec-rdp-wash-nr-abs)⁹ '(a) washing, cleansing'. A few speakers usually suppress this change before -lis; most, if not all, suppress it in certain cases; for a few it seems optional.¹⁰ We can write the rule

Morphophonemic Rules

Phonemic Forms Allophonic Rules

Phonetic Forms

⁷A rule changing ɨ to a in all forms except those with applic (or -lis 'nr', etc.) would not only be ridiculously complicated as to environment, but it would not account for the many verbs whose stems end in an ɨ which doesn't restrict itself to appearing only before applic and -lis. For instance, note the following forms (from Class II): kɨ-teki 'he cuts it', kɨ-teki-liy-a (him-cut-applic-pres) 'he cuts it off/for him'. Under such an analysis all such verbs would simply be exceptional.

⁸The basic function of the applicative is to provide for the introduction of some sort of second object to the verb, an indirect object, benefactive, or what have you. This secondary object is the one that governs the agreement prefix marking. For instance, nieč-teki (me-cut) 'he cuts me', nieč-teki-liy-a (me-cut-applic-pres) 'he cuts it off/for me'. Most transitive verbs form the 2 pers hon forms by reflexivizing the 2 pers verb and applying the applicative. (You can think of e.g. to-mo-maki-liy-a as "you hit him for yourself".) Other verbs in the same class as maka show that it is the applicative, not the honorific meaning, that conditions the change from a to ɨ. For instance, nieč-ihta (me-see) 'he sees me', nieč-ihti-liy-a (me-see-applic-pres) 'he sees it in me'.

⁹The absolutive is an ending that gets stuck on nouns if they are neither possessed nor pluralized or in some other way burdened with a suffix. E.g. kak-tli (sandal-abs) 'sandal', i-kak (his-sandal) 'his sandal', kak-me (sandal-pl) 'sandals'.

¹⁰The form resulting from suppression is, of course, tla-pah-päka-lis-tli. The motive for the suppression (which seems to be innovative) is suspect of being a disambiguation: there are many verbs that in many forms differ only by the final a versus ɨ of the stem. For instance, the verb root päka means to wash, and the root päki means to be happy. But this distinction is partially obliterated in the forms

expressing this alternation as follows:

Deactivation.

a → ± / ___ {
 -liy 'applicative'
 -lis 'nominalizer'

I have called this rule Deactivation because it is my opinion that there is involved a changing of the root to be intransitive or less active semantically before the application of the applicative or nominalizer.¹¹ I am by no means sure that Deactivation should not be

tlā-pah-pāki-lis-tl± (unspec-rdp-wash-nr-abs) '(a) washing, cleansing', and pah-pāki-lis-tl± (rdp-rejoice-nr-abs) 'joy', where only the presence or absence of tlā- 'unspecified object' distinguishes. Indeed, the tlā- is probably introduced only to disambiguate; witness the form pah-pāka-lis-tl± '(a) washing, cleansing', where it is not needed to disambiguate, and is therefore dropped.

¹¹For a large portion of the vocabulary the generalization holds true that verbs ending in ± are intransitive or stative, whereas those ending in a are transitive or active. All verbs which have the -a it is something else that marks this transitivity). In quite a few cases one is tempted to propose an -a 'trns' and -± 'intrns' pair of morphemes: e.g. tlapān-± (break-intrns) 'it breaks', ki-tlapān-a (it-break-intrns) 'he breaks it'; čičil-iew-± (red-vr-intrns) 'it reddens' ki-čičil-iew-a 'he reddens it'. However, there are a fair number of intransitive or stative verbs that end in a (e.g. čuka 'he cries', siewa 'he is cold') and of transitive verbs ending in ± (e.g. ki-tek± 'he cuts it', ki-kak± 'he hears him').

In any case, there is evidence that something like an active/inactive switch is involved in the alternation of a and ± before -lis in the fact that many speakers give different meanings to forms with -lis according to whether or not they suffer what I have called Deactivation. For instance, I have been told that kah-kayāwa-lis-tl± (rdp-deceive-nr-abs) means deceiving someone, while its Deactivated partner kah-kayāwi-lis-tl± means being deceived. Also several speakers interpret čamāwa-lis-tl± (brag-nr-abs) as 'praise' (bragging on someone else) and čamāwi-lis-tl± as 'braggadocio' (bragging on oneself), which is a less "transitive" concept. Also, for many speakers, čikāwa-lis-tl± (strong-nr-abs) means active strength or power, strength to do something, whereas čikāwi-lis-tl± means toughness, or strength to endure something.

It is probably also relevant that in some verbs there is a sort of applicative form without -liy which also involves changing final a to ±. For instance: ki-kāwa (it-leave) 'he leaves it', mo-kāwi 'refl-leave' 'he keeps it back for himself'; ki-kowa (it-buy) 'he buys it', nieč-kuwi-y-a (me-buy-pres) 'he buys it for me', nieč-kuwi-liy-a (me-buy-applic-pres) 'he buys it from me'.

viewed as a morphemic change rather than a phonological one. This issue will be discussed further in Section 2.3.3.3.3. Meanwhile, we will treat Deactivation as a phonological rule.

Deactivation is also exemplified in Table 2, in the form 'you hon sg stand it'.¹²

1.2.2 Preterite Stem Formation (PSF)

There is a different alternation appearing in the forms in Table 2, namely the appearance or absence of -a on the end of the stem. We can describe this as a morphophonemic rule deleting the final vowel of a verb stem¹³ in the preterite forms and before certain suffixes like -ḳi 'pret pl'. (We will call these -ḳi Class suffixes.)¹⁴ This rule we will call Preterite Stem Formation (PSF).

Preterite Stem Formation (PSF)

V \rightarrow \emptyset / VC $__$ \neq [in pret forms
[before -ḳi class suffixes

The VC in the environment serves to capture the generalizations that monosyllabic verb stems do not suffer PSF, nor do stems ending in CCV (see note 4). All verbs which end in VCV and which take -ḳi 'pret sg'

¹²That form is also an example of a rule of Palatalization, which palatalizes apicals before i (usually) and certain morphemes, among them -liy 'applic' and -lis 'nr'. Palatalization is not particularly relevant to the discussion in this paper.

¹³From these data alone we could write the rule to delete only a, or even to insert it. However, the rule also applies to i in verbs like teḳi 'cut' (ḳi-teḳi 'he cuts it', o-ḳi-teḳi 'he cut it'), and if we were to insert we couldn't tell which vowel to insert.

¹⁴Other suffixes in this class are: -cinow 'hon refl', -ta 'non-pres dur', -tehkow 'shall/should Verb upon arrival', -tiewa 'Verbs as he leaves/Verbs in passing', -ti 'Verbs as he goes (pl -ti-be), -tika 'Verbing', -tiwic 'Verbs as he comes (pl -tiwic-i), -tã 'Verb as he go (non-pres)'.
'

are (probably) to be marked as exceptional to this rule.

1.3 Rules affecting w, y, and h

1.3.1 Final Resonant Deletion (FRD)

Tetelcingo Aztec has no word final resonant consonants.¹⁵ Many forms, both of verbs and of other classes of words, have stem-final resonants. When those stems appear word finally, the resonant consonants disappear.¹⁶ An example is the noun k^w-aw-itl (tree-abs) 'tree, stick', which has the possessed form i-k^w-a 'his stick, tree'. Similarly, ēn-tl̄ (dwelling-abs) 'house, home', i-ēn (his-dwelling) 'his house, home'. Another example is the Class II verb ēiwa 'do'. Representative forms of this verb are given in Table 5. As with other Class II verbs, PSF deletes the final vowel from the stem of ēiwa, producing a consonant-final preterite stem. This consonant disappears word-finally; there is no word-final w in the form 'he did it'. Another Class II example would be the verb tlam̄ 'end', which has the forms tlam̄ 'it ends', o-tla (past-end:pret) 'it ended', and o-tlam-k̄ (phonetically [o'tl̄aŋk̄]) (past-end:pret-pl:pret) 'they ended'. These alternations can be accounted for by the following rule:

¹⁵Two classes of exceptions to this statement should be noted. (1) Certain words tend to act as proclitics to a following word, and a final resonant may then be retained. For instance, /-pan/ 'on' usually appears as [pa], but may retain its n in such forms as i-pan tunal-̄ (its-on sun-abs) 'in the daytime'. (2) l and r do not delete. On the other hand, l and r are devoiced and obstruentized in syllable-final position. E.g. kal-̄ ['kal̄] (house-abs) 'house', i-kal ['ikā] (his-house) 'his house.' Positing a bleeding ordering between l-Obstruentization ←

Classical Aztec and other modern dialects retain most or all of these word final resonants. and FRD provides an explanation of why l's (and r's) do not delete.

¹⁶A rule inserting these consonants could not work; it would be impossible to know (unless by ad hoc class markings), which consonant should be inserted.

Table 5
Class II verbs with w-final pret stems

| | | | |
|----------------------------------------------|-------------------|-------------------------------|------------------|
| ki-ēiwa it-do | 'he does it' | o-ki-ēi past-it-do pret | 'he did it' |
| o-ki-ēih-ki past-it-do -pl pret pret | 'they did it' | ki-ēiwa-s it-do-fut | 'he will do it' |
| ki-ēiwa-ya it-do-impf | 'he was doing it' | ki-ēiwa-lo it-do-hon | 'he hon does it' |
| to-mo-ēiwi-liy-a thou-refl-do-applic-pres | | 'you sg hon do it' | |

Final Resonant Deletion (FRD)

$\overset{C}{[-obs]} \longrightarrow \emptyset / __ \#$

FRD accounts for the alternations of many forms, and has no exceptions (except those mentioned in the footnote above). Under the model of phonology I am using it would be ordered late, among the phonological rules. In any case it clearly must apply after PSF (feeding order).

| | | |
|-----|-------------|------------|
| BF | o-kɨ#ēiwa | oɤtlamɨ |
| PSF | okiēiw | otlam |
| FRD | okɨēi | otla |
| | 'he did it' | 'it ended' |

1.3.2 Spirantization

There are no preconsonantal w's in Tetelcingo Aztec. Every time one would expect a w to show up preconsonantly, an h appears in its

place. Notice in Table 5 the form for 'they did it'. One would expect, after the deletion of the final a of the stem, to have a w preceding the suffix -k̄. However, there is an h in the expected place. Many other alternations exhibit the same behavior.¹⁷ These alternations are best accounted for by a rule spirantizing w to h in syllable-final position.¹⁸ We will call this rule Spirantization.

Spirantization

w → h / ___ \$

Spirantization is also an allophonic rule, and also must apply after PSF.

| | | |
|--|----------------|---------------|
| | BF | o-k̄ʔiwaʔk̄ |
| | PSF | ok̄ʔiwk̄ |
| | Spirantization | ok̄ʔihk̄ |
| | | 'they did it' |

1.3.3 y-Assibilation

Table 6 contains forms of the Class II verb piya 'have'. Three alternations involving y are observable in these data. The first is the alternation between y in forms like 'he has it' and ʂ in forms like 'he had it' or 'they had it'. This alternation is best accounted

¹⁷E.g. k^waw-itl (tree-abs) 'tree', k^wah-me (tree-pl) 'trees'; or ʂoʂuw-ik (green-adj) 'unripe sg', ʂoʂuh-k̄-ī (green-adj-pl) 'unripe pl'

¹⁸A rule turning h into w intervocalically would have exceptions in such forms as naha 'I' and ah-as̄ (rdp-arrive) 'they arrive.'

The rule given in the text could be given as occurring preconsonantly, but letting it happen syllable finally works just as well; either all word-final w's also become h's before they are deleted by PSF, or they are deleted by PSF and never get a chance to become h's. Syllable final is a natural environment for such a spirantization to occur; devoicing ^v occurs in other Aztec dialects in exactly that environment. _{of w}

Table 6
piya (Class II)

| | | | |
|----------------------------------------------|-------------------------------------|----------------------------------|-----------------------|
| ki-piya it-have | 'he has it' | o-ki-piš past-it-have pret | 'he had/got it' |
| o-ki-piš-ki past-it-have-pl | 'they had/got it' | ki-piya-s it-have-fut | 'he will have it' |
| ki-piya-ya it-have-impf | 'he had it' (careful speech) | ki-pia-ya it-have-impf | (same, normal speech) |
| ki-piya-lo it-have-hon | 'he hon has it' (careful speech) | ki-pia-lo it-have-hon | (same, normal speech) |
| to-mo-pi-liy-a thou-refl-have-applic-pres | 'you sg hon have it' | | |

for by a rule of y-Assibilation.¹⁹

y-Assibilation

y → š / ___ š

As I will explain later, I think this rule is either morphophonemic or morphosyntactic. It affects very few forms: piya and three other Class II verbs that I know of, and the numeral form yeš-pa (three-on) 'three times', from yey-i (three-abs) 'three'. If we are to keep FRD, which affects hundreds of forms, as a general, allophonic rule, we will have to claim that all syllable final y's that do not assibilate, including

¹⁹ Although I know of no Class II verb ending in šV which would constitute a direct contradiction of a proposed rule š → y / V ___ V, I think the proposal highly unlikely. The rule would have to be limited only to verbs and only to the position ___ V#, because š occurs intervocally in many verbs further back in the stem (e.g. mišiwī 'have a baby'). y, on the other hand, never occurs in syllable final position on the surface.

those which suffer FRD, are exceptions to y-Assibilation.

y-Assibilation must apply after PSF (feeding order, again). Also, it must apply before and not after FRD (bleeding and anti-bleeding orders), to make sure that the final y on 'he had/got it' is assibilated rather than deleted.

| | | | |
|------------------------|-----|-----------------|-------------------|
| | BF | o-kɨ#pɨya | o-kɨ#pɨya#kɨ |
| | PSF | okɨpɨy | okɨpɨykɨ |
| <u>y</u> -Assibilation | | okɨpɨʃ | okɨpɨʃkɨ |
| FRD | | --- | --- |
| | | 'he had/got it' | 'they had/got it' |

1.3.4 Strong Contraction

Another alternation in the data in Table 6 is that shown in the form 'you hon sg have it'. With Deactivation applying, as it should since this form has an applicative, and assuming pɨya to be the basic form of the verb, we would expect the form *to-mo-pɨyɨ-liy-a. I would like to propose that this alternation be accounted for by the following rule:

Strong Contraction

ɨyɨ ==> i

This rule is general, so far as I know (there are no ɨyɨ sequences that I know of on the surface), but it applies only in the Deactivated forms of verbs like pɨya (of which there are only three and their derivatives that I know of). I tend to think of the rule as morpho-phonemic, but I cannot argue strongly for that position.

1.3.5 Squishing

The other alternation in the data in Table 6 is that between piya in careful speech imperfect and honorific forms and pia in normal speech. This alternation can best be accounted for by a late rule which I will call Squishing.

Squishing

$\text{ɨy} \implies \text{i} / \frac{\text{_____}}{\text{[-str]}}$ [except in careful speech]

This rule is sensitive to the regular penultimate stress (which explains why the form 'he will have it' cannot undergo it) and also to a somewhat optional secondary stress, which in careful speech is applied two syllables before the main stress or else two syllables in from the end of the stem, if that is farther from the main stress. The following forms illustrate these facts. (' marks primary stress, and 2 marks secondary stress). ki-2piya-s-'kiya (it-have-fut-would've) 'he would have had it', ki-pia-s-'kiya (same, faster speech); ki-2piya-s-ki'ɥ-nɨ (it-have-fut-would've-irr) 'he would have had it', ki-pia-s-ki'ɥ-nɨ (same, faster speech). (Notice that the 'would've' morpheme kɨya is also undergoing Squishing in the last two forms. The change from a to ɥ will be discussed in Section 4.)

This rule is general, and to my mind clearly allophonic. It must follow the stress rules (which also are allophonic) (bleeding ordering), and also y-Assibilation (bleeding and antibleeding).

| | | | |
|----------|-----------|------------------|-----------------------|
| BF | o-kɪʔpiya | kɪʔpiyaʔskɪyɸ-nɪ | kɪʔpiyaʔskɪyo' "a'-nɪ |
| PSF | okɪpiy | ----- | ----- |
| y-Assib | okɪpiʃ | ----- | ----- |
| Stress | o'kɪpiʃ | kɪpiyaskɪ'yɸnɪ | kɪpiyaskɪ'yɸnɪ |
| 2 Stress | ----- | kɪ2piyaskɪ'yɸnɪ | (exceptional) |
| Squish | ----- | kɪ2piyaskɪ'yɸnɪ | kɪpiaskɪ'yɸnɪ |

'he had/got it' 'he would've had (same, faster speech)
it' (careful speech)

1.4 Rules affecting high vowel tenseness

1.4.1 Strong Contraction and Squishing

We have already seen two rules affecting the tenseness of high front vowels. Strong Contraction (section 1.3.4) converts two lax ɪ's with a y in between to a single tense i. Squishing (section 1.3.5) converts an ɪy sequence to a tense i when unstressed.

1.4.2 Tensing

The Class I verb k^wɪh-k^wɪ (rdp-grasp) 'take (up)' exhibits the same kind of patterning as maka in Table 1,²⁰ with the exception of the 3 pers hon form, which has a stem vowel change from ɪ (all the other forms) to i. Thus the stem in kɪ-k^wɪh-k^wɪ (it-rdp-grasp) 'he takes it (up)' contrasts with the stem in kɪ-k^wɪh-k^wɪ-lo (it-rdp-grasp-hon) 'he hon takes it (up)'. I propose to account for this alternation by a rule of Tensing, which will tense ɪ to i before 3rd

²⁰ It has the following forms: kɪ-k^wɪh-k^wɪ (it-rdp-grasp) 'he takes it (up)', kɪ-k^wɪh-k^wɪ-k (it-rdp-grasp-pret:sg) 'he took it (up)', kɪ-k^wɪh-k^wɪ-kɪ (it-rdp-grasp-pret:pl) 'they took it (up)', kɪ-k^wɪh-k^wɪ-s (it-rdp-grasp-fut) 'he will take it (up)', kɪ-k^wɪh-k^wɪ-ya (it-rdp-grasp-impf) 'he was taking it up', to-mo-k^wɪh-k^wɪ-lɪy-a (thou-refl-rdp-grasp-applic-pres) 'you hon sg take it (up)'.

²¹ Trying to lax i to ɪ would result in a rule with a ridiculously complicated environment.

Tensing also applies before a few other morphemes, most notably -tɪy 'caus'. E.g., from Class II, kɪ-nekɪ (it-want) 'he wants it', to-mo-neki-tɪy-a (thou-refl-want-caus-pres) 'you hon sg want it'.

pers hon morphemes.^{21 22}

Tensing

± → i / ___ ≠ 3rd pers hon morpheme

This rule is obviously morphosyntactic, given its environment. It is, however, general within that environment; I know of no case where ± precedes a 3 pers hon morpheme.

1.4.3 Laxing

1.4.3.1 ±-Tensing vs. i-Laxing

The Class II verb ēiya 'look, hope' is one of the three verb roots I know of that pattern like piya 'have' (Table 6, section 1.1.3). ēiya, however, has an extra alternation: its preterite stem vowel is i instead of ē. For instance, tla-ēiya (unspec-look) 'he wakes up, looks around'. o-tla-ēiš, not *o-tla-ēiš, (past-unspec-look:pret) 'he woke up, looked around'.

Two ways suggest themselves to account for this fact. One is to assume that the i is basic and is laxed to ē. This could be accomplished by the following rule:

²²There are several different allomorphs of the 3rd pers hon morpheme, all deriving apparently from a historical form -lowa. -o and -owa (two of the allomorphs) do not appear after surface V-final stems. Both -lo and -wa (the other two forms) do, and both condition Tensing. For instance, k± has an alternate hon form ki-k^wih-k^wi-wa (it-rdp-grasp-hon) 'he hon takes it (up)'.

Regarding the distribution of -wa versus -lo, verbs ending in ± tend to prefer -wa. Almost all Class II verbs ending in ± take it. However, some Class I verbs ending in ± take only -lo (e.g. the unrdp'd ki-k^w± 'he grasps it', ki-k^wi-lo 'he hon grasps it'), some can take either ('he hon takes it (up)' forms above), and others demand -wa (e.g. asi 'he arrives', asi-wa 'he hon arrives'). So it appears that the distribution is idiosyncratic; you spell -wa on some forms and -lo on others.

i-Laxing

i → ɨ / ___ ya

This rule would have exceptions in the speech of some people in the forms k-on-i-ya (it-dist-drink-impf) 'he was drinking it' and iya 'goes'.²³ However, many speakers say both koniya and ɨya.

Another way to account for the alternation would be by a rule of ɨ-Tensing.

ɨ-Tensing

ɨ → i / [+pal] ___ [+pal]
[+obs]

This rule would have exceptions in such forms as ki-ɨi-ɨikow-a (it-rdp-bear-pres) 'outlasts, beats him' ɨi-ɨolo (impv-flee) 'Flee', ɨi-ɨi-tu (dog-abs:dim) 'dog'.²⁴

Actually, there is a third possibility. Since it only affects one root, this may actually be an idiosyncratic spelling rule. However, the fact that some of the verbs derived from that root are quite different semantically may mean that people will perceive them as different cases of the same process rather than as different examples of

²³ Whether the case of iya counts as relevant exceptionality is problematical; under one analysis, which I think right, the i is epenthesized in this verb. The exceptionality of koniya could be gotten around by having the rule apply only in stems.

It is interesting, and perhaps relevant, that ɨ tends to be pronounced [e^h] before ya.

²⁴ These exceptions could be gotten around by limiting the rule to verb roots, or limiting it to verbs and ordering it before Reduplication and Epenthesis.

Note also that the palatalized pret stem form of kisa 'emerge' actually shows an apparent laxing before the palatal consonant. E.g. kisa 'he emerges', ki-kiɨ-tiy-a (it-emerge-caus-pres) 'he takes it out'. This apparently happens only with this one stem, but it may be relevant in that it casts some doubt on the probability of a rule tensing high front vowels before palatal obstruents.

the same root. If at least two forms that are "different" to the speakers undergo the same phonological change, there is a generalization that I think should be expressed by a non-spelling phonological rule of some sort.

In the end, then, I would claim that some rule is needed to account for the i/ɨ alternation in verbs derived from ɛɨya. i-Laxing and ɨ-Tensing look like likely candidates; it is not clear which is preferable. The discussion in the next section will help us to a choice.

Either i-Laxing or ɨ-Tensing would have to apply after PSF (feeding ɨ-Tensing indirectly and bleeding i-Laxing), and ɨ-Tensing would have to follow y-Assibilation (feeding ordering). i-Laxing might well be allophonic; ɨ-Tensing could not.

1.4.3.2 Class IIowa verbs

What I am calling Class IIowa consists of three verb stems so far as I know. Their behavior is illustrated in Table 7.

powa means 'count' as well as 'tell'. The other verbs in this class are sowa 'extend, spread', and kowa 'buy'. kowa is pronounced by most speakers as ['kwɔ], because of an allophonic raising of o to ɔ following k, which is even stronger before w or h. Many younger speakers raise o to u in these contexts, producing ['kuwɔ].

Although the present tense owa of these verbs sounds like the ow-a of Class IIIo verbs, the pattern actually followed is that of Class II verbs, with the added fillip that there is something funny going on about the tenseness of the vowel. Ignoring the tenseness for

Table 7
Class IIowa verbs

| | | | |
|------------------------------------------------|----------------------|---------------------------------|--------------------------------|
| ki-powa it-tell | 'he tells it' | o-ki-pu past-it-tell pret | 'he told it' |
| o-ki-puh-ki past-it-tell-pl pret pret | 'they told it' | ki-powa-s it-tell-fut | 'he will tell it' |
| ki-powa-ya it-tell-impf | 'he was telling it' | ki-pua-ya it-tell-impf | (same, less careful speech) |
| ki-powa-lo it-tell-hon | 'he hon tells it' | ki-pua-lo it-tell-hon | (same, less careful speech) |
| to-mo-puwi-lay-a thou-refl-tell-applic-pres | 'you hon sg tell it' | | |

the moment, notice that, as in Class II verbs like ēiwa 'do' (Table 5): (1) PSF and FRD can account for everything (except the tenseness) in the form 'he told it'. (2) PSF and Spirantization can give us the form 'they told it' (again, excepting the tenseness). (3) Deactivation can give us the 'you hon sg' form. (4) It looks like Squishing is applying in the fast-speechy forms.

1.4.3.3 Squishing revisited

As we noticed above, Squishing appears to be applying in the fast speech versions of the impf and 3 pers hon forms. Assuming that we can give the rule an o as input, ^{we}_^ can have Squishing account for these forms by changing it slightly to include ow's as well as ay's. In fact, this version of Squishing is even preferable under feature theory.

Squishing (2nd edition)

{ɨy}_{ow} ==> {i} / (somewhat suppressible in careful speech)²⁵
[-str]

1.4.3.4 Laxing

None of the rules posited so far can account for the alternation between o and u in the stem in careful speech forms. Strong Contraction and Squishing both require a semivowel in order to apply, and besides, their structural descriptions are not met in other respects in the crucial forms. Tensing, of course, is never conditioned by -kɨ, much less by a \emptyset suffix, so it can't help us either. i-Laxing cannot help us because it only applies to i.

Ignoring the action of Squishing in the fast-speech forms, you get an o only when it is followed by wa, whereas you get u finally, before h, and before wɨ.²⁶ I think the easiest way to handle this is to make the u basic and propose a rule of u-Laxing.²⁷

²⁵The suppressibility of this rule is different for ɨy and ow: it can be more easily suppressed with ɨy. Many speakers suppress it normally with ɨy but with ow only in very careful speech. This sort of thing seems to be characteristic of allophonic rules. Notice also that ow seems to Squish a little less readily with Class IIIo verbs (2.2.3.1) than with these Class IIowa verbs. I do not know why that should be.

²⁶A good example of the difference here is that of the two nominalized forms of powa with -lɨs. tla-puwɨ-lɨs-tlɨ (unspec-count-nr-abs) means a story, a recitation, or a (recited) prayer or telling of the Rosary, while tla-powa-lɨs-tlɨ means an accounting or listing. (The word 'list', 'account', or 'number' is formed with the passive nr -l: tla-powa-l-ɨ.) Clearly the first form has been Deactivated, while the second one has not. (Both these forms get secondary stress, evidently obligatorily, and thus Squished tla-pua-lɨs-tlɨ seems to be starred. You do, however, get tla-pua-l-ɨ.)

²⁷For whatever it's worth, this fits in with the historical development: Classical Aztec had poowa, and the Classical long vowels usually correspond with Tetelcingo tense vowels.

u-Laxing

$$u \longrightarrow o / \text{ ___ } wa$$

This rule is really the same rule as i-Laxing, and should be collapsed with it. The fact that this can be done so easily is probably sufficient reason to choose the i-Laxing analysis over the i-Tensing one. Doing so results in saving a rule: the same rule can take care of the forms with ɛiya and these with Class IIIowa verbs.

Laxing

$$\begin{array}{c} V \\ [+hi] \\ [\alpha fr] \end{array} \longrightarrow [-tns] / \text{ ___ } \begin{array}{c} C \\ [-cons] \\ [\alpha fr] \end{array} a$$

There are no surface uwa's that I know of to contradict this rule,²⁸ but there are iya's in some people's speech (note 23 in section 1.4.3.7) That fact, coupled with the facts that the rule applies to only a very limited number of forms, and that speakers tend to react to suppression of the rule by saying "No, that's wrong" rather than "That sounds funny" (or some such thing), make me think it is likely morphophonemic. It must apply after Deactivation (bleeding order) and PSF (also bleeding order), and it must feed Squishing.

²⁸ Except for the case of those speakers who pronounce kowa 'buy' as ['kuwa], because they don't permit ko (or only derive it from kɛ). For those speakers we could just write Laxing not to happen after velar consonants.

| | | | |
|---------|---------|--------------|------------|
| BF | kɨʔpuwa | o-kɨʔpuwaʔkɨ | kɨʔpuwaʔya |
| PSF | ----- | okɨpuwkɨ | ----- |
| Laxing | kɨpuwa | ----- | kɨpowaya |
| Spirant | ----- | okɨpuhkɨ | ----- |
| 1,2 Str | kɨ'powa | 2okɨ'puhkɨ | 2kɨpo'waya |
| Squish | ----- | ----- | 2kɨpu'aya |

'he tells it' 'they tell it' 'he was telling it'

| | | |
|--------|---------------------------------|-----------------------|
| BF | tləʔpuwaʔlɨs-tlɨ | tləʔpuwaʔlɨs-tlɨ |
| Deact | tlapuwɨlɨstlɨ | (exceptional) |
| Laxing | ----- | tlapowalɨstlɨ |
| | 'telling, recitation, story' | 'accounting, listing' |

1.4.3.5 Strong Contraction revised

Adopting this analysis means that we are going to have to revise Strong Contraction. The reason is that we are now positing that the stem ɨya is actually underlyingly ɨya, which means that the expected applicative form (where Deactivation will take place) would be to-mo-ɨyɨ-lɨy-a instead of to-mo-ɨyɨ-lɨy-a (thou-refl-wait-applic-pres). The actual form that surfaces is to-mo-ɨi-lɨy-a 'you sg non await it.' This can be explained easily by expanding the rule of Strong Contraction slightly.²⁹ Again, feature theory would prefer this second version of Strong Contraction over the first.

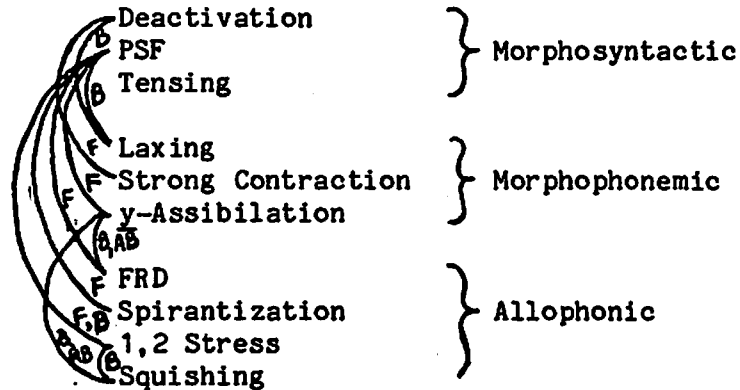
Strong Contraction (Mark II)

$$\left\{ \begin{array}{c} 1 \\ \frac{1}{2} \end{array} \right\} yɨ ==> i$$

²⁹ It could also be explained by ordering Laxing before Deactivation, producing stem-final ɨya which would then be changed to ɨyɨ. This is not necessary, however, and it would make Laxing a very early rule (the first one of all, in fact), which does not seem to fit its character. And, if the analysis in 2.3.3.3 is correct, and Deactivation is a syntactic rule, it is impossible.

1.5 Summary of rules proposed so far

Below are listed the rules and orderings we have posited so far.³⁰



2. Class III verbs

Class III is the biggest class of verbs in Tetelcingo Aztec, though most of the verbs in this class are derived by adding applic, caus, or vr endings to another stem. There are, however, many simple stems that exhibit the same alternations. htowa 'say' and lwiya 'tell' are the two stems we will use for most of the discussion as representatives of Classes III_o (the owa verbs) and III_± (the iya verbs). Representative forms from them are given in Table 3 (repeated

³⁰I am using the following conventions for marking rule orderings:
 (1) The order from top to bottom is an acceptable, sometimes a probable, ordering. However, orderings are claimed only for rules connected by arcs.

(2) $\binom{1}{2}$ or $\binom{1}{2}$ mean rule 1 must be ordered to precede rule 2.

(3) Arcs are marked according to the kind of interaction that motivates the ordering. F represents feeding orderings, AF represents anti-feeding (counterfeeding). B represents bleeding orderings, and AB represents anti- (counter-) bleeding orderings.

below for convenience).

2.1 The distribution of -a 'pres' (tentative)

One of the things that distinguish Class III verbs from other verbs is that they take the suffix -a which I have glossed 'pres'. This suffix appears in the present and (tensed) when followed by the

Table 3
Class III verbs

| IIIo | | III± | |
|-----------------------------------------------|-------------------------------|------------------------------------------|-----------------------------------|
| ki-htow-a it-say-pres | 'he says it' | ki-lwiy-a him-tell-pres | 'he tells him' |
| o-ki-hto past-it-say | 'he said it' | o-ki-lwi past-him-tell | 'he told him' |
| o-ki-htoh-ki past-it-say-pl pret | 'they said it' | o-ki-lwih-ki past-him-tell-pl pret | 'they told him' |
| ki-htu-s it-say-fut | 'he will say it' | ki-lwi-s him-tell-fut | 'he will tell him' |
| ki-htow-#-ya it-say-pres-impf | 'he was saying it' | ki-lwiy-#-ya him-tell-pres-impf | 'he was telling him' |
| ki-htu-#-ya | '(same in careless speech) | ki-lwi-#-ya | '(same in less careful speech) |
| ki-htu-lo it-say-hon | 'he hon says it' | ki-lwi-lo him-tell-hon | 'he hon tells him' |
| to-mo-hta-lwiy-a thou-refl-say-applic-pres | 'you hon sg say it' | | |
| to-mo-lwi-liy-a thou-refl-tell-applic-pres | 'you hon sg tell him' | | |

imperfect marker -ya (or the other suffixes in its class).³¹ For a first approximation, it would seem reasonable to spell -a where it appears on the surface, and refrain from spelling it elsewhere. It is the only morpheme which shows this particular pattern of distribution, so there is no point to spelling it everywhere and then writing a special deletion rule to get rid of it everywhere it doesn't appear. And there is nothing that I know of already grouping the environments in which it appears into a class, which we could use to predict where it is spelled.

2.2 The tense/lax and semiV/h/∅ alternations

Another distinguishing feature of Class III verbs is the alternations they show in their stems between lax vowel + semivowel configurations, lax vowel + h, lax vowel alone, and tense vowel alone. Thus, in Table 3, ow and iy alternate with oh and ih, o and i, and u and i, respectively. The account of these alternations can be separated into three questions: (1) Are the stems basically consonant-final or not? (2) If they are, is the final consonant w/y or is it h? If they are not, is either w/y or h derived from the other, or are they introduced independently? (3) Is the stem vowel basically tense (u/i) or lax (o/i)?

2.2.1 Is there a final consonant?

2.2.1.1 Previous analyses say no

³¹They are -ya 'impf', -ni 'irr', and -ni 'agentive'. tla-htow-a (unspec-say-pres) means 'he speaks'; tla-htow-h-ya is 'he was speaking'; tla-htow-h-ni means either 'he would speak (irr)' or 'ruler (one who speaks)'.

The tensing of -a will be dealt with in Section 4.2.1.

Previous analyses of Tetelcingo Aztec (probably influenced by traditional analyses of Classical Aztec, where the analysis is questionable also) say no.³² They assume the underlying (phonemic) form of kɨtowa to be kɨ-hto-a, and of kɨlwɨya to be kɨ-lwɨ-a. Then (in generative terms) they insert w and y by an allophonic rule which epenthesizes an α point semivowel between a high vowel and a. This works fine. But they then have to ascribe the h's that appear before certain suffixes to spelling rules involving those suffixes. In other words, either all these verb stems are spelled with a final h before -kɨ 'pret pl' and all the other (10 or so) suffixes in that class, or else all those suffixes are spelled with a preceding h when they are used with Class III verbs. There is no explanation: it is just an arbitrary fact. Similarly, they must mark all these verb stems to undergo tensing before the class of suffixes that includes -s 'fut'. Again, there is no explanation, only statement. Thus, it is claimed that these verbs must be marked ad hoc to take -a 'pres', to tense, and to insert h, and there is no reason at all why all three ad hoc classes should happen to coincide. The only thing that is explained is why there is a semivowel in the forms which have -a.

2.2.1.2 Yes

If we assume there to be a consonant on the end of the stem, we can avoid the problems mentioned above. The reason Class III verbs

³²Pittman (1954) 30, also p. 22 note 1, Brewer and Brewer (1962) Apéndice III, B. (p. 273, 274).

Vázquez Soto (to appear) gives an analysis of Classical Aztec which proposes a final h on Class III verbs. The h is changed to w or y in the appropriate contexts. (In Classical Aztec "real" w's changed to [W] instead of h preconsonantly, and y-Assibilation was more prevalent.)

have an h before certain suffixes is that they have an underlying consonant in that place, which either is h or will be changed to h. The reason other classes of verbs do not have an h before those suffixes is that they do not have the appropriate consonant in that place. The spelling of the morphemes, which is ad hoc under any system (there is no reason why 'say' should be spelled hto instead of maka, or htow) is thus used to avoid further adhocity in accounting for the distribution of h's before -k± class suffixes.

Similarly, the presence of a stem-final consonant can be used to explain the tense vowel which occurs before suffixes like -s 'fut', and the spelling of -a can also be related to the presence of that consonant. How this is to be done will be spelled out in the next sections.

For these reasons, I conclude that it is preferable to posit that Class III verbs have a stem-final consonant.

2.2.2 Which consonant is it? w/y

2.2.2.1 A free ride on Spirantization

If we assume there to be an h on the end of the stem, we could easily enough change it to w or y in the appropriate context (following an α front high vowel before a (and before h if a late change)), as Vázquez Soto does for Classical Aztec. However, this is a new rule and not elsewhere needed to my knowledge. If we assume w to be basic in Class IIIo verbs, however, we get a free ride; we already have Spirantization waiting on the sidelines, eager to change w into h preconsonantly. All we have to do is broaden the rule (which actually makes it preferable in terms of feature theory) to include y.

Spirantization (Mark II)

$$\begin{matrix} \{w \\ y \} \end{matrix} \longrightarrow h / \text{ ___ } \$$$

The spelling of Class III verbs, then, will explain for us the fact that w and y appear intervocalically: they are there because they are spelled there. FRD will explain why there are no w's or y's on the ends of the stems in the pret sg cases: they have been deleted by FRD. And the revised version of Spirantization will explain why there are h's before -k± class suffixes: they are basic w's and y's that have been Spirantized.

2.2.2.2 What about y-Assibilation?

One objection to the above proposal is this: we already have a rule getting rid of y's before consonants, namely y-Assibilation. If forms like 'he told him' have a derivational form k±-lw±y-k±, why doesn't y-Assibilation apply to that form, giving *k±-lw±š-k±? Or, to put the same objection in another form, if it is true that y's Spirantize preconsonantly, why don't we get the form *k±-p±h-k± instead of k±-p±š-k± (it-have:pret-pl) for 'they got/had it'? There is no principled way to distinguish the forms that Assibilate from those that Spirantize. Thus, if we are going to maintain both rules, we will have to resort to ad hoc markings to tell which forms undergo which rule.

There is a little independent evidence outside of Class III verbs (unfortunately very little—preconsonantal y's are hard to come by) that y's become h's. One is the case of m± 'hand', which has the two

related forms māy-ītl (hand-abs) 'fist',³³ ³⁴ and i-mah-pīl (his-hand-child) 'his finger'.³⁵ The other case is rather stronger; it is that of the numerals yey-ī (three-abs) 'three' and the obviously derived ēik^w-īey-ī (five-and-three-abs) 'eight'. These have the related forms yēs-pa (three-on) 'thrice' and ēik^w-īeh-pa (five-and-three-on) 'eight times'. If y-Assibilation is a somewhat archaic, fossilized rule, you would expect its operation to hang on in more common forms (like thrice in English) and to be regularized in relatively less common forms (like eight times). I would claim that that is what has happened in Tetelcingo. The form for 'eight times' in Classical Aztec was ēik^w-ēēs-pa, by y-Assibilation from ēik^w-ēey-ī. The expected reflex of that form in Tetelcingo would be ēik^w-īēs-pa, but that form is incorrect. Positing Spirantization as the presently productive rule affecting preconsonantal y's would allow us to explain

³³This is the only form of mā with the absolute; in the sense 'hand' it is always possessed.

³⁴The only other noun I know of with a y-final stem, k^w-īey-ītl (skirt-abs) 'skirt', simply deletes the y before the only consonant I know it to occur before: k^w-īe-me (skirt-pl) 'skirts'. It is possible that this y is to be deleted by the rule of Semivowel Deletion that will be given as a possible proposal for deleting y before l in these Class III verbs (section 2.3.3.1). If that is correct, it gives indirect support to the analysis I am proposing.

³⁵Another meaning (to our minds anyway) of the morpheme pīl seems to be 'projection' or 'projecting body part': c.f. i-k^w-ītla-pīl (his-dung/back-child) 'his tail', i-k^wso-pīl (his-foot-child) 'his toe', i-nene-pīl (his-thought-child) 'his tongue'. Notice that the form is pīl instead of pīl in 'his tongue'; 'his toe' is also irregular in that 'foot' is elsewhere -k^wī, an unparalleled variation as far as I know. This sort of thing makes me hesitant to put too much weight on the alternation of y and h in māyītl and imahpīl. Add to it the fact that 'hand' appears as mā instead of mah in many compound verbs (e.g. kī-mā-toka (it-hand-follow) 'he touches it'), as well as in all possessed forms, and the case isn't all that strong.

Another possible case of mah 'hand' is mah-tlak-tlī (hand-next:to?-abs) 'ten' (contrast with mā-k^wi-l-ī (hand-grasp?-nr-abs) 'five'). It is synchronically to be recognized in them.

However, these forms are quite opaque, and it is doubtful that a morpheme 'hand'

Also CA already had
receptions where y > s.
Eg. And. P. 20, 32.
Also y > h in CA.
ahōmic vs. ayōhōmic
ayōhōmic

*
(also, I'd yeppa
previously, now
in CA (And. p. 29)
maybe I'd yehp
at the crucial
stage?).
sempe-sepp
zahpa
ompa-ōppa
zahpa

this change as a regularization, which is resisted in the more common form yeš-pa.

In view of these facts, and taking into consideration that the operation of y-Assibilation is evident in only a small class of forms (four verb stems that I know of, derived verbs from two of them, and yeš-pa), it seems to me to be a well-motivated decision to make y-Assibilation an early (morphophonemic) and minor rule, and Spirantization a late (allophonic) and general rule (bleeding and antibleeding orders). This has the effect of making the many Class III verbs the rule and the few forms with y-Assibilation the exception.³⁶

| | | | |
|-----------------|------------|------------|-----------|
| Input form | kɨ#htow#kɨ | kɨ#lwɨy#kɨ | kɨ#pɨy#kɨ |
| <u>y</u> -Assib | --- | (minor) | kɨpɨškɨ |
| Spiran | kɨhtohkɨ | kɨlwɨhkɨ | --- |

'they said it' 'they told him' 'they got/had it'

2.2.3 Is the stem vowel tense or lax? Lax

2.2.3.1 Free rides on FRD and Squishing

We still have to settle the question of the underlying tenseness or laxness of the stem vowel. Two things immediately suggest themselves as reasons to posit a lax underlying vowel. If we have a lax

³⁶What I have not explained is why all Class II verbs ending in ya undergo y-Assibilation and no Class III verbs do. In other words, I have not explained why the distinction between [+y-Assib] and [-y-Assib] verbs should coincide exactly with that between Class II and Class III. I think the explanation is that the analysis in section 2.3.3.3 is right, and all Class III verbs have the same morpheme -y 'active/trns' on the end of the stem. That morpheme is marked [-y-Assib]. Thus all Class III verbs would fail to undergo y-Assibilation. This would, in effect, make y-Assib minor not with respect to the number of morphemes, but rather with respect to the number of forms, to which it potentially applies.

underlying vowel, and assuming, as indicated before, that the reason there is no final consonant on the pret sg forms is that FRD has applied, we have accounted for those forms. However, if there is an underlyingly tense vowel, we would have to lax it to account for them. Secondly, notice the two non-careful-speech impf forms. If we assume a lax underlying vowel, we can get a free ride on the independently needed rule of Squishing to give us these forms.³⁷

2.2.3.2 Contraction

If, then, we are going to propose that Class III verbs underlyingly end in a lax vowel plus a semivowel, we have to explain why a tense vowel shows up before the -s 'fut' suffix and the other suffixes in its class.³⁸

Note that not only is there a tense vowel before these suffixes, but there is no semivowel (or h). Yet we are claiming that these stems end in a semivowel.

It seems, then, that we have, in a sense, two problems coinciding. Perhaps we can let them explain each other. Positing a contraction of a vowel and its attendant semivowel³⁹ into a tense vowel takes

³⁷This proposal would work equally well if we posited h as basic instead of y/w; presumably the h would have been changed to y or w in by the late point in the derivation at which Squishing applies.

³⁸They are: -ki 'come and Verb' (pl -ki-we), -ko 'came and Verbed', -k# 'subjct pl', -s 'fut' (pl -s-k#, and probably complex forms -s-k#-ya, -s-k#y#-n# (-fut-would've-(irr)) 'would've'), -ti 'go and Verb' (pl -ti-we), -to 'went and Verbed'.

³⁹Or its attendant h, if we go that route. This would involve positing a rule $Vh \rightarrow tnsV / ___\$$. This looks somewhat funny (unnatural) as compared to the rule given in the text, but as it would be morphosyntactic anyway, that shouldn't matter. A more serious objection is that there are many exceptions to it on the surface, some of which probably involve non-derived (i.e. basic) h's (e.g. the one in šh#a 'spit'). These would have to be marked as exceptional to the

care of both problems in one swell foop: it explains both the absence of the semivowel and the presence of the tenseness. So let us propose the following rule:

Contraction

$$\left\{ \begin{array}{l} \text{ɪy} \\ \text{ow} \end{array} \right\} \implies \left\{ \begin{array}{l} \text{i} \\ \text{u} \end{array} \right\} / _ \$$$

This solution explains why these tense vowels appear in Class III verbs and not in others,⁴⁰ which former analyses did not do.⁴¹ Where there is no stem-final semivowel, Contraction cannot occur, and so no tense vowels show up.

2.2.3.3 But what about Spirantization?

Positing Contraction, however, involves a conflict with Spirantization. Both rules take as input a lax vowel-cum-semivowel. Why do some forms suffer Contraction, and others suffer Spirantization? One answer is to say, "I don't know why". This would involve ad hocly marking certain kinds of forms to undergo Contraction and letting the rest undergo Spirantization.⁴²

above rule. On the other hand, there are no surface exceptions to the rules getting rid of semivowels. This then constitutes another argument for having the semivowels as basic rather than h.

⁴⁰Well, not in most others. Class IV has them too. But we will give a similar explanation for those cases. (Section 4.1)

⁴¹Both Pittman (1954) and Brewer and Brewer (1962) list (at least some of) the suffixes in this class as carrying an extra mora of "length" which is to be added to a preceding vowel. (E.g. Pittman sec. 29 <-s> but not <-tɪ>, cf. 37, 38; Brewer and Brewer p. 265 note 13. See also Brewer (1969) p. 50 note 4.) But they give no explanation as to why this process occurs only with Class III (and Class IV, sec 4.1) verbs.

⁴²Contraction, since it is only attested in Class III verbs (and maybe class IV) would seem the proper choice to be the minor rule. Spirantization has a much wider base, showing up in nouns, adjectives, etc., as well as verbs of several classes.

But when we come to list which forms undergo Contraction and which ones do not, we notice something interesting. The forms which do not undergo contraction either (a) are followed by the -a 'pres' morpheme (pres forms and those with -ya class suffixes), which explains automatically why they do not Contract, or (b) are pret or are followed by a -k_i class suffix. This is exactly the class that suffers PSF in other verb classes. To put it the other way around, those Class III forms that suffer Spirantization are precisely those that in other classes suffer PSF; those that do not suffer Spirantization either (a) have the -a 'pres' suffix, which explains why they would not Spirantize, or (b) suffer Contraction instead. This coincidence is quite striking, especially when one sees how it splits the class of verbal aspect markers in two. For instance, the aspect marker -t_i 'Verb as you go' (-k_i class) conditions both PSF in Class II verbs (k_i-ēih-t_i 'he does it as he goes', from ēiwa 'do') and Spirantization in Class III verbs (k_i-htoh-t_i 'he says it as he goes'), whereas the aspect marker -ti 'go and Verb' (-s class) does not condition PSF in Class II verbs (k_i-ēiwa-ti 'he goes and does it') and it conditions Contraction instead of Spirantization in Class III verbs (k_i-htu-ti 'he goes and says it'). This same pattern of behavior holds everywhere: if a suffix conditions PSF in Class II verbs (-k_i class) it will condition Spirantization rather than Contraction in Class III verbs. If it does not condition PSF in Class II verbs (-s class) it will condition Contraction rather than Spirantization in Class III verbs (with the exception of the -ya class suffixes, which, although they do not condition PSF in Class II verbs, have -a 'pres' spelled before them in Class III verbs, and therefore condition

neither Contraction nor Spirantization.)

If we say that suffixes that condition Contraction are distinguished from those that condition Spirantization by an ad hoc class marking, we have no explanation for the striking coincidence of the posited classes with the classes independently posited for PSF. Their coincidence is pure coincidence. It would be much preferable to use the independently needed markings for classes relative to PSF to predict which suffixes will condition Contraction or Spirantization.

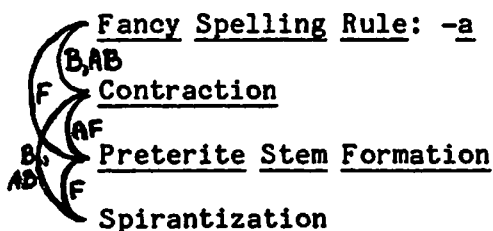
One way to try to do this would be to instruct the grammar to use some special mark to distinguish the PSF-conditioning suffixes (say [+D]) and to refer to that mark in deciding whether to apply Contraction or not. But that is totally ad hoc; we are in effect, simply stating that the two class distinctions coincide, and not giving any reason for it.

There is another way to go about things. Remember that the morpheme -a, which I have glossed 'pres', has an idiosyncratic distribution (2.2), appearing on the surface only in the present tense and before suffixes of the class of -ya 'impf'. Well, why not make it a little more idiosyncratic, and have it spelled also in all those cases where PSF is going to apply.⁴³ Then it can protect the otherwise

⁴³Or, probably better, have it spelled everywhere except before suffixes of the class of -s 'fut', nominalizers, applicatives and causatives, and hon markers.

It may be well asked at this point why it should be thought better to introduce an ad hoc constraint on a spelling (such as that above) than to introduce an ad hoc constraint on a rule (e.g. "apply Contraction only before suffixes of the class of -s, nominalizers, etc."), when both accomplish the same thing. The answer is twofold: (1) under any analysis -a is going to have such a condition; I know of no reason why the distribution I am proposing should be intrinsically harder for the grammar to apply than the one described in section 2.1. Thus the

stem-final consonant while Contraction applies. Then PSF will delete the -a (which counts as stem-final), uncovering the consonant, and thus setting things up for Spirantization to do its thing. In other words (or diagrams), what I'm proposing is this:



Here are some derivations to further show what I mean. (I'm using the 'say it' forms; the 'tell him' forms are quite exactly parallel.)

| | | | | |
|-------------|-----------|-------------|----------------|-----------|
| Fancy Spell | | | | |
| BF | kɪʔhtowʔs | o-kɪʔhtow-a | o-kɪʔhtow-aʔki | kɪʔhtow-a |
| Contr | kɪhtus | ---- | ---- | ---- |
| PSF | ---- | okɪhtow | okɪhtowki | ---- |
| Spirant | ---- | ---- | okɪhtohki | ---- |
| FRD | ---- | okɪhto | ---- | ---- |

'he will say it' 'he said it' 'they said it' 'he says it'

2.3 The honorific forms

solution I am proposing needs only one ad hoc class distinction, namely where -a should be spelled, where a solution with an ad hoc constraint on Contraction would have two. (2) If we put an ad hoc condition on Contraction as suggested above, we have no explanation of the fact that the morphemes that do not condition Contraction are exactly the same ones that do condition PSF. However, the class of forms in which -a is spelled under the solution I am proposing is not the same one as that of those which condition PSF. If both classes are in fact ad hoc, that is just what we should expect. The interaction of these two ad hoc classes is then used to predict which forms will suffer Contraction and which ones won't.

So far we have accounted for all the forms except the honorific ones. As a glance back at Table 3 will show, we have to account for the following facts: both verbs show the tense vowel without a final semivowel or h in the 'he hon' forms, and both verbs show a lax vowel, still without h, in the 'you hon sg' forms. The vowel in the form 'you hon sg say it' is a instead of o (or u). Also, the applicative in the 'you hon sg say it' form is odd.

2.3.1 o-Changing

The wierdest form of the bunch is the 'you sg hon say it' form. To start out with, the applicative is different. -lwiy is used with all verbs in Class IIIo, except those ending in low-a or row-a,⁴⁴ and with very few others.⁴⁵ There is no consonant on the end of the stem, making these the only cases where there is a lax stem vowel followed by a suffixal consonant. Worse yet, the stem vowel is a rather than one of the tense-lax pair o/u. Putting off discussion of the other items to a little later, let me comment on the vowel change. As far as I know, this is a completely unpredictable sort of thing. Some

⁴⁴Verbs ending in low-a or row-a appear to take an applic -wiy in place of the final ow instead of -lwiy after it. For instance, ki-šelow-a 'he distributes it', ki-šel-wiy-a 'he distributes it to him'; ki-markär-ow-a (it-mark-vr-pres) 'he marks it', ki-markär-wiy-a 'he marks it for him'. This may well have arisen through a haplology (lo-lw_± => lw_±), and maybe we should still have a synchronic rule to do it. (l and r are interchangeable in many words; historic r is often present l, and vice versa.)

⁴⁵-wiy appears with Class Iu verbs (Section 3.) where it functions as a caus, as other applics occasionally do. E.g. temo 'he descends', ki-temo-wiy-a 'he lowers it'. It also appears on the pret stem of the Class II verb koč_± 'sleep', again with caus meaning: ki-koč-wiy-a 'he rocks him (to sleep)'.

lwiy 'tell' itself may actually be parsed as -l-wiy, where l is the stem 'tell' and wiy is the applicative. (There is a defective verb liy 'tell', as in k-iliy-a 'he tells him'.)

verbs have a as here, many have ±,⁴⁶ and some remain o: For instance, note the following forms, in Table 8, all of which have c before owa in the 3 pers forms. We have claimed that there is a w on the end of the stem in BF, so we are going to have to get rid of it one way or

Table 8
o-Changing alternations

| | |
|-----------------------------------------------------------------------|--------------------------------|
| ki-k ^w ahpic-ow-a him-stiff-vr-pres | 'he gives him gumption' |
| to-mo-k ^w ahpic-a-lwiy-a thou-refl-stiff-vr-applic-pres | 'you hon sg give him gumption' |
| ki-tlacow-a it-beat-pres | 'he beats it (eggs)' |
| to-mo-tlaco-lwiy-a thou-refl-beat-applic-pres | 'you hon sg beat it' |
| k-ilakacow-a it-roll-pres | 'he rolls it up' |
| ti-m-ilakaci-lwiy-a thou-refl-roll-applic-pres | 'you hon sg roll it up' |

⁴⁶One might vaguely expect this from Deactivation: note however that o/u and ± never elsewhere pair as transitive and intransitive or active and inactive.

A very attractive tack to take would be to change o to a and then let Deactivation change the a to ±, rather than having o-Changing II change the o directly to ±. And this may be the right way to go. However, (1) This makes some of these a's exceptional to Deactivation, the only ones I know of that are. If o-Changing II is ordered after Deactivation, however, as it would be in the model I would propose, there need be no such exceptions posited to Deactivation. Also, (2) we would run into an ordering paradox with our revised form of Deactivation (Section 2.3.3.3), which we are going to let get rid of our w for us. Also (3), for whatever it's worth, doing things directly (o → ±) avoids positing an abstract (post-basic) form for which there is no direct evidence.

another. So let's assume that it is already gone at the time of application of the following two rules:

o-Changing I (possibly minor--many exceptions)

o → ɨ / ___ [applic

o-Changing II (minor rule)

o → a / ___ [applic

2.3.2 A free ride on Contraction or Tensing

Consider the 'he hon' forms. It looks like we could take care of them simply by letting Contraction apply. To do this, we would make the '3 pers hon' morpheme one of those before which -a 'pres' is not spelled. Alternatively, if we can get the semivowel gone somehow else, Tensing could explain our tense vowels for us.⁴⁷ For now, let us take the first option as more likely.

2.3.3 Why is there no w/y before -lis?

For the 'you hon sg' forms, however, we cannot use Contraction to get rid of the semivowel, because that would incorrectly give us a tense vowel. Here there are several tacks we can take.

Before discussing these possibilities, let me say that the same pattern shows up before the applicative in non-honorific forms, and also sometimes before the nominalizer -lis. Examples are: ki-htɨ-li-

⁴⁷We would, of course, need to tense o as well as ɨ. However, there is some independent evidence that it does so anyway: Brewer and Brewer give the form ki-sosu-lo (it-prick-hon) 'he hon pricks it', from the Class I verb soso 'prick'. (-wa never tenses o, at least on the surface, as it does ɨ, but that is explained by Laxing, Section 1.4.3).

lɨy-a (him-see-applic-applic-pres) 'notes it in him', the applic form of kɨ-htɨ-lɨy-a (him-see-applic-pres) 'sees it in him'; maɕi-s-tɨ-lɨs-tlɨ (know-fut-caus-nr-abs) 'learning, knowledge', nominalized from kɨ-maɕi-s-tɨy-a (him-know-fut-caus-pres) 'teaches him'; koko-lɨs-tlɨ (hurt-nr-abs) 'sickness', from mo-kokow-a (refl-hurt-pres) 'be sick'; contrast with cɨknu-lɨs-tlɨ, not cɨkno-lɨs-tlɨ, (hiccup-nr-abs) 'the hiccups', from cɨknow-a (hiccup-pres) 'he hiccups'.⁴⁸

2.3.3.1 Semivowel deletion? Perhaps

One possibility would be to write an arbitrary rule deleting semivowels before the applicative and -lɨs. Or, perhaps better, delete them before ɭ (or perhaps all resonants; see the second note in section 2.2.2.2). That would fit in with the fact that there are no semivowel-ɭ (or indeed any native C₁) sequences in the language. (Nor, of course, are there any semivowel-C clusters.) We could propose the following rule:

Semivowel Deletion

$$\left\{ \begin{array}{c} w \\ y \end{array} \right\} \longrightarrow \emptyset / \text{___ } \underline{\text{ɭ}}$$

Under this analysis we would want to get the tense vowels in the 'he hon' forms (2.3.1) not by Contraction but by Tensing. In other words, Semivowel Deletion bleeds Contraction,⁴⁹ as it must for the 'you hon

⁴⁸It gives no explanation (and I have none) for why there are no cases of ɭ-lɨs-tlɨ (from ɭ-y-lɨs-tlɨ) among these verbs to parallel the cases of koko-lɨs-tlɨ 'sickness' (mo-koko-w-a 'he is sick') versus cɨknu-lɨs-tlɨ (cɨkno-w-a 'he hiccups') 'the hiccups'. One would expect that y would be as likely as w to be used before -lɨs.

⁴⁹You could avoid this ordering by making Contraction apply only before obstruents. However, the form cɨknu-lɨs-tlɨ 'the hiccups', from cɨknow-a 'he hiccups' would be a positive exception. Also, under the analysis I am going to propose, the imperfect forms of Class IV verbs (Section 4, Table 4) would be positive exceptions.

sg' forms, but feeds Tensing.

| | | | | | |
|--|-----------|--------------|------------------|-------------------------------------|--|
| | BF | kɪʎlwɪyʎlo | to-moʎlwɪyʎlɪy-a | maɕi-s-tɪyʎlɪs-tlɪ ⁵⁰ ** | |
| | SemiV-Del | kɪlwɪlo | tomolwɪlɪya | maɕistɪlɪstlɪ | |
| | Contr | --- | --- | --- | |
| | Hon Tens | kɪlwilo | --- | --- | |
| | | 'he hon says | 'you hon sg say | 'learning, knowledge' | |
| | | it' | it' | | |

The rule would be morphosyntactic under the model I am using, as it precedes two morphosyntactic rules. It would have a few exceptions with -lɪs, including the form cɪknu-lɪs-tlɪ (hiccup-nr-abs) 'the hiccups', from cɪknow-a (hiccup-pres) 'he hiccups'.

2.3.3.2 Metathesis? No ⁴Another very attractive tack to take would be to propose that the semivowel and the -l metathesize.

Methasetis

$$\begin{array}{l} \{ \\ y \\ 1 \end{array} \begin{array}{l} 1 \\ 2 \end{array} \implies \begin{array}{l} 2 \\ 1 \end{array}$$

This would be followed by a rule deleting y after l.

y-Deletion

$$y \longrightarrow \emptyset / l _$$

Methatesis, like Semivowel Deletion above, would bleed Contraction and feed Tensing. Derivations like the following would be produced.

⁵⁰This is not actually the BF: Palatalization has already applied to the BF matɪ-s-tɪyʎlɪs-tlɪ.

| | | | |
|----------|------------------|------------------|------------|
| BF | to-mo#htow#lɪy-a | to-mo#lwɪy#lɪy-a | kɪ#lwɪy#lo |
| Metath | tomohtolwɪya | tomolwɪlyɪya | kɪlwɪyo |
| o-Chng I | tomohtalwɪya | _____ | _____ |
| Contr | _____ | _____ | _____ |
| y-Del | _____ | tomolwɪlɪya | kɪlwɪlo |
| Hon Tens | _____ | _____ | kɪlwilo |

'you hon sg say it' 'you hon sg tell him' 'he hon tells him'

The beauty of this solution is that it accounts not only for the disappearance of the semivowels and the lax character of the vowel, but it also offers to explain the wierd applic -lwɪy which appears on all Class IIIo verbs. It also fits in with the fact that l is never the second member of a native CC cluster.

What it does not explain, except very adhocly, is the fact that the supposedly metathesized y does not show up on the surface. In other words, it needs a rule corresponding to Semivowel Deletion besides its rule of Mesathetis. So all Methatesis is really accomplishing is accounting for -lwɪy. Which a spelling rule could do as well. And there are exceptions to y-Deletion: e.g. k-wal-yek-nuca (him-hither-well-call) 'comes and speaks nicely to him.' These exceptions can, as it turns out, be dealt with be restrictions on y-Deletion (e.g. only in verb suffixes, or (globally) in derived sequences only), but they tell against the solution. Also Mesathetis would have as exceptions the same forms (like cɪknu-lɪs-tlɪ 'the hiccups') as Semivowel Deletion.

Worse is the fact that the solution predicts the wrong form *kɪ-htu-lwo for 'he hon says it'. Again, we could get around this by restricting Metasethis to forms with applic, or by an ad hoc rule $w \rightarrow \emptyset / _ l _ _ o$, which at least would have no exceptions that I know of.

But at this point it appears that we'd probably do better with just an adhoc spelling rule for -lwiy after class IIIo verbs, and another rule deleting semivowels (like Semivowel Deletion). Then the fact that a couple of other verbs also take -lwiy which show no other evidence of having -w final stems pretty much closes the lid on the coffin.⁵¹

Allow me to shed a few tears; I really liked that theory.

2.3.3.3 It's really Deactivation

2.3.3.3.1 y's disappear and Deactivation applies in the same environment

Although it may seem irrelevant, remember that Deactivation took place before the applic and the nominalizer -lis, with exceptions before -lis. Notice that the y's and w's are disappearing in exactly the same environment.

Remember too that Deactivation had exceptions with -lis, but not with -liy. (For example, pah-päka-lis-tli (rdp-wash-nr-abs) '(a)

⁵¹ Brewer and Brewer (1962) give (in Class I) ki-soso 'he pricks it' to-mo-soso-lwiy-a 'you hon sg prick it'; ki-k^wesa 'he half-cooks it' to-mo-k^wesa-lwiy-a 'you hon sg half-cook it'.

Note too that Class Iu verbs, which parallel Class IIIo verbs in several ways, seem to have -wiy as their applic (but see note 59). It seems quite possible then that speakers would tend to perceive -lwiy as a combination of the two applicatives -liy and -wiy, much as -ltiy is probably perceived as a combination of -liy and -tiy 'caus'. Such a combination is probably the historical source for both morphemes. Against their being synchronically considered combinations is the fact that neither conditions Deactivation, as you expect them to do if -liy were in fact their first member. Contrast Deactivated ki-šiw-liy-a 'he does it to him' with ki-šiw-ltiy-a 'he forces him to do it' and to-mo-k^wesa-lwiy-a 'you hon sg half-cook it'. In fact, -ltiy sometimes seems to work Deactivation backwards: cik^win 'he runs' (Class II) ki-cik^wina-ltiy-a 'he forces him to run'; m-ušlin (refl-shake) 'he shakes' (Class II), k-ušlina-ltiy-a 'shakes it, him'.

An apparent counterexample is ki-tuk-ltiya 'he plants it for him', from tuka 'plant'. But the meaning is applicative, not causative ('he makes him plant it'), and we could use that fact to account for the deviant behavior.

washing, cleansing', instead of *pah-päki-lis-tli.) And remember that the semivowel also sometimes does not delete before -lis, but always does before -liy. (E.g. ciknu-lis-tli (hiccup-nr-abs) 'the hiccups', not cikno-lis-tli.)

2.3.3.3.2 y is added to Class II stems to transitivize them

Next, note this: There are a number of Class III_± verbs that are clearly derived from Class II verbs ending in ±. For instance, aki 'it fits', k-akiy-a 'he fits it in'; comuni 'it breaks', ki-comuniy-a 'he breaks it'; tla-tläni (unspec-win) 'he conquers', ki-tläniy-a 'he beats him/wins it/earns it'. The class difference shows up clearly in forms where the derived Class III verbs suffer Contraction or Spirantization but the Class II verbs do not. For instance, aki-s (fit-fut) 'it will fit' vs. k-aki-s 'he will fit it', or o-comun-ki (past-break:pret-pl) 'they broke' vs. o-ki-comunih-ki 'they broke it'. The transitivized forms have different-acting stems from the corresponding intransitive forms. We will want to claim that the transitive verbs have a y underlyingly on the end of stem, like all other Class III_± verbs, and that the intransitive verbs do not, like the rest of the Class II verbs. This will explain all three surface differences (the presence of the y in the present, the tense vowel in the future, and the presence of h rather than the truncation of the vowel in the preterite pl) through the rules we have already posited (Contraction and Spirantization). The question is, how do we get it there?

2.3.3.3.3 Deactivation does it

Having noted these two facts, that y appears on certain transitive stems but not on their counterparts, and that it also fails to appear in Class III verbs before applic and sometimes before -l₁s, which is exactly the environment in which Deactivation applies, I would like to claim that in fact it is Deactivation which is deleting the y's and w's for us in Class III verbs. Perhaps we could write Deactivation like this:

Deactivation

$$\begin{Bmatrix} a \\ w \\ y \end{Bmatrix} \longrightarrow \begin{Bmatrix} \underline{a} \\ \emptyset \end{Bmatrix} / \text{--- [applic} \\ \text{--- [-l₁s 'nr' (usually)} \end{Bmatrix}$$

This is not quite as wierd as it looks. Granted that turning a into ḅ and deleting semivowels are two very different phonological processes, but this is a morphosyntactic rule, in which the phonological business is at a minimum. And the absolute identity of the environment for changing a to ḅ and dropping semivowels (even to having the same morpheme be occasionally exceptional), together with the identical meaning shift (trns to intrns) in clear cases, make it look strongly like the same thing is going on in both cases, which, according to the Collapsing Hypothesis, means that we should take care of both cases by the same rule.

And, in fact, we do not need to claim that Deactivation is even a phonological rule at all.⁵² Probably the right way to go about it is

⁵²If it is treated as a phonological rule, it is the first rule to apply after the BF: no rule ever needs to precede it (except under the analysis rejected in the third footnote in section 2.1), and the only rules that could precede it are those that have no ordering requirements with any previous rule. These statements hold true, as far as I know, not only for the rules examined in this paper, but also for

something like this: in the syntactic component a stem is marked transitive or intransitive (or maybe active/inactive) on the basis of (1) its meaning, and (2) whether or not there is an applicative or a nominalizer of the appropriate type which is to be used with it. If such a suffix is to be used, the stem will be inactive (except sometimes with the nominalizer when the active nature of the meaning is important.)⁵³ All transitive verbs of the class (arbitrary, I'm afraid) we have called Class III are given a morpheme 'trns', or 'active', which occurs at the end of the stem and is spelled as y after ± and as w after o.⁵⁴ In other words, the applic and -l±s are not put on a transitive/active stem at all, but on its intransitive/inactive counterpart, which is spelled differently from the very start, because it does not have a morpheme 'trns/active'.

Following that, the class of verbs which take -a 'pres' is easy to predict: it is precisely those that have -y/-w on the end of their stems. So -a will be spelled (in the proper forms) on those verbs.⁵⁵

all other phonological rules of the language.

⁵³Note that doing things this way makes it easier to account for odd cases like that of -lt±y seemingly working Deactivation backwards (2nd note back). We can just say that -lt±y sometimes demands an active stem, and we don't have to write a new rule of 'Reactivation'.

⁵⁴This may help explain why verbs should be "deactivated" with the applicative: the applicative will get an "active" marker on the end of it, and a verb doesn't need two of them. (But note that some verbs, e.g. with -lt±y 'caus', have both -a 'active' and -y 'active'. See note 51.)

⁵⁵Note that this solution involves giving most verbs which do not take -a 'pres' a stem ending in a consonant, to which is added a morpheme -a 'trns/active' (not 'pres'), or a morpheme -± 'intrns/unactive'. This goes along with what was proposed in footnote 11, but with the difference that not just the verbs that have clear trns/intrns pairs would be thus spelled, but all verbs that we have analyzed as suffering Deactivation. The verbs that do not exhibit this pattern of behavior (Class III and Classes I± and II±) are the only ones with "real" vowel final roots. Then an arbitrary marking

This solution seems to me to be the best way to explain why Class III verbs which precede applicatives or -l̄is 'nr' act as if they had no semivowel, and all other forms of these verbs act as if they do.

Although I think that Deactivation is a syntactic rule, for the rest of this paper I will act and talk as if it were a phonological rule. This will make it easier to see the phonological consequences of what is happening, and will save me from having to chop tiny active/unactive morphemes off stems as I write them. ⁴ 3. Classes Iu and Ii.

Classes Iu and Ii are very small; I know of three Iu verbs and one Ii verb. The Iu verbs are pano 'pass', temo 'descend', and tlehko 'ascend'.⁵⁶ The Ii verb is k-on̄ 'drink it'.^{57 58} Representative forms

distinguishes Class III verbs, which mark act/unact forms with -w/-y, from the other vowel final verbs, which do nothing to mark it. This solution also involves claiming that the few intransitive stems that end in a (mentioned in note 11) are really transitive or at least active: their intr/unact form shows up in the forms with applic, etc. For instance, ɕuka 'cries' is under this analysis ɕuk-a (cry-act); the unactive form shows up in k̄i-ɕuk-i-t̄i-y-a (him-cry-unact-caus?/applic?-act-pres) 'he mourns him', or to-mo-ɕuk-i-t̄i-y-a 'you hon sg cry'.

⁵⁶Evidently Brewer and Brewer (1963) had data giving tlehko as a straight Class I verb. The fact that the o would be raised to [ʊ] or even to [u] for many speakers because of the preceding k would interfere with clarity of judgment on something like this. In other words, I could well have heard e.g. [otlehkʊk] sometimes and thought I heard [otlehkuk], or the Brewers might have heard [otlehkuk] and thought it was from the rule raising o after k. However, I am sure that this verb follows the pattern of pano for many speakers, including some who do not appreciably raise o after k in other contexts.

⁵⁷Again, the Brewers list the present tense of this verb as coni (i.e. koni), which would make it also a normal Class I verb. Again, I may have heard it so and misinterpreted; it is often hard to hear the difference between i and ɿ in word-final (post-stress) position. I think that some speakers do pronounce it so. However, I am also quite sure that many speakers say kon̄, which is what needs explaining here.

⁵⁸Likely the verb should be split k-on̄-ɿ (it-immed-drink). The stem shows up as i without a preceding on- in the 'you hon sg' form in Table 9, in the nominal form tla-i-l̄-ɿ (unspec-drink-nr-abs) '(strong)

are given in Table 9.

None of these verbs has a clearly applicative form. temo and tlehko have forms using -wiy 'applic?' with caus meaning: ki-temo-wiy-a (it-descend-applic?/caus?-pres) 'he lowers it'; ki-tlehka-wiy-a

Table 9
Class Iu and Ii verbs

| | | | |
|-----------------------------------------------|-----------------------|----------------------------------------|------------------------|
| pano pass | 'he passes' | k-oni it-drink | 'he drinks it' |
| o-panu-k past-pass-pret sg | 'he passed' | o-k-oni-k past-it-drink-pret sg | 'he drank it' |
| o-panu-ki past-pass-pl pret | 'they passed' | o-k-oni-ki past-it-drink-pl pret | 'they drank it' |
| panu-s pass-fut | 'he will pass' | k-oni-s it-drink-fut | 'he will drink it' |
| panu-ya pass-impf | 'he was passing' | k-oni-ya it-drink-impf | 'he was drinking it' |
| | | k-oni-ya it-drink-impf | (same, other speakers) |
| pano-wa pass-hon | 'he hon passes' | k-oni-wa it-drink-hon | 'he hon drinks it' |
| to-mo-panu-ltiy-a thou-refl-pass-caus-pres | 'you hon sg pass' | | |
| ti-m-i-tiy-a thou-refl-drink-caus-pres | 'you hon sg drink it' | | |

drink', and in the related Class I verb #-tl-i (water-unspec?/down?-drink) 'he drinks water', which for some speakers seems to be Class Ii. (I.e. they say #tli instead of #tli.) The on- 'immed' prefix is probably there only to avoid a one-syllable verb.

(it-ascend-applic?/caus?-pres) 'he raises it'. Notice that o-Changing II (2.3.1) has applied to this second form.

3.1 Final Vowel Laxing?

These verbs are Class I: they do not truncate by PSF, but take the -k 'pret sg' suffix. Ignoring for the moment the hon and applic forms, the final vowel of the stem is always tense except for the present tense form, which is the only form in which that vowel is final. So it would look reasonable to write a rule of Final Vowel Laxing.

Final Vowel Laxing

V → [-tns] / ___ #

This rule would have exceptions in forms like the suffix -ti 'go and Verb', but those exceptions could be gotten around by making the rule operate / ___ #. It would also have exceptions in the Class IIowa forms like o-k_i-pu 'he told it' (UF o-k_i≠puw) (1.4.3.2) but they could be gotten around by ordering Final Vowel Laxing to precede FRD (anti-feeding). Another exception will be #tli 'he drinks water' (see last footnote) for many speakers. (For those speakers who also say koni 'he drinks it', the rule would simply be restricted to back vowels.)

The applic forms would also give us problems here. This solution would claim that the BF of 'he lowers it' is k_i≠temu≠wiy-a, and we have no mechanism for laxing the u to o. If we tried to expand Laxing to operate / w_i, we would have lots of exceptions: e.g. all Deactivated forms of Class IIowa verbs (3.1). So either we write an ad-hoc rule to lax it, or we say that since it's only one case it's just an idiosyncrasy and should be taken care of by a spelling rule.

Either way it's messy. Note too that the form 'he raises it' (BF k-i#tlehku#wiy-a) suffers o-Changing II: either it must first lax the u to o, or else we have to expand o-Changing II to change u's also. So then, this solution requires us to posit one new rule (Final Vowel Laxing) and probably another (to lax u to o before -wiy).

Note however some less negative features of this analysis. (1) The 'he hon passes' form works out nicely. The proposed BF panu#wa feeds into the rule of Laxing (3.1.2), giving the surface form automatically. Laxing can also account for the form koniya 'he was drinking', which many speakers use. (The BF would be k-oni#ya under this analysis.) However, many speakers say koniya; this form must be marked as exceptional to Laxing. (2) This solution gives us a way of predicting that these verbs will be Class I instead of Class II: we can instruct the grammar that only [-tns] vowels can be truncated by PSF and that all verbs with a [+tns] final stem vowel must take -k in pret sg forms. (3) *There is a morpheme -yu 'abstract, collective', which has the form -yo word finally. Final Vowel Laxing would account for this*
This analysis would give derivations like the following:

| | | | | | |
|-------------|------|--------|---------|----------------|------------------|
| | BF | panu | panu#wa | k-i#temu#wiy-a | k-i#tlehku#wiy-a |
| Special Lax | ---- | ---- | ---- | k-i#temowiya | k-i#tlehkwiy-a |
| O-Change II | ---- | ---- | ---- | (minor) | k-i#tlehkawiya |
| Laxing | ---- | panowa | ---- | ---- | ---- |
| Final V Lax | pano | ---- | ---- | ---- | ---- |

'he passes' 'he hon passes' 'he lowers it' 'he raises it'

3.2 Positing stem-final semivowels works better

There is a neater way to deal with these verbs, which reflects the fact that they pattern in many ways like Class III verbs. If we

posit that these verbs' stems end in a lax vowel with a semivowel (i.e. posit BF's panow and k-oniy), all the allomorphies pretty much fall out in the wash.

FRD gives us the present tense forms. -a 'pres' is not spelled on these forms (arbitrarily, I suppose⁵⁹), and therefore will not block Contraction from applying in the pret forms (and before other suffixes of the class of -k±). Thus Contraction will give us the tense vowels in the pret, fut, impf, and caus ('you hon sg') forms. If we add -wiy to the list of forms that condition it, Deactivation can explain why the forms with -wiy are not tense. And, finally, the 'he hon passes' and the koniya version of 'he was drinking it' can be accounted for, as in the Final Vowel Laxing model, by Laxing. This can be illustrated by the following derivations:

⁵⁹You could claim that the final semivowel on the stem is not -w/y that would make it difficult for Deactivation to get rid of the final semivowel for us in the applicative forms.

Another attractive tack would be to claim that the suffix is not -wiy but rather -iy. (Most other occurrences of -wiy are on Class IIIo verbs ending in row-a or low-a, and can be accounted for by Haplology—see first footnote in 2.3.1.) Then you would claim that the final w or y on these verbs is not -w/y 'active' and let that account for the fact that -a is not spelled. Deactivation would not apply in the applicative forms either, for the same reason. But the right forms would be an automatic consequence of adding -iy to the basic stem.

The strongest objection to this analysis is that it would make the form ki-koē-wiy-a (him-sleep-applic?/caus?-pres) 'he rocks him (to sleep)' anomalous; it would still have to have -wiy.

| | | | | |
|------------|-------|-----------|----------|-----------|
| Deact (BF) | panow | oʔpanowʔk | panowʔwa | k-oniyʔya |
| Contr | --- | opanuk | panuwa | koniya |
| Lax | --- | ---- | panowa | (koniyə) |
| FRD | pano | ---- | ---- | ---- |
| Spirant | --- | ---- | ---- | ---- |

'he passes' 'he passed' 'he hon passes' 'he was passing'

| | | |
|-------------|----------------|-----------------|
| Deact (BF) | kɪʔtemowʔwiy-a | kɪʔtlehkoʔwiy-a |
| Deact | kɪʔtemoʔwiy-a | kɪʔtlehkoʔwiy-a |
| O-Change II | (minor) | kɪtlehkawiyə |

'he lowers it' 'he raises it'

Thus positing a final semivowel on these stems explains all the allomorphies without having to posit any new rules. The main difference between these verbs and Class III verbs is that -a 'pres' is not spelled on them. And it is easy enough to predict that these will be Class I and not Class II. We simply instruct the grammar, after the spelling of -a, that all pret sg verbs whose stems end in semivowels are to have -k spelled onto them.

3.3 Honorific -lo

Verb stems ending in the honorific marker -lo also seem to fit in Class Iu, but they have one funny quirk.⁶⁰ Representative forms are

⁶⁰The honorific -o, which replaces final a on the stems on which it occurs, also shows the same allomorphy. It seems to be slightly more honorific than -lo, which in its turn is more honorific than the various plural morphemes which normally replace it in non-present tenses. -lo may be used instead of the plurals, however, when some extra degree of honorificity is involved, such as both subject and object being honorific. (The honorific reflexive used in the examples in this section fulfills this requirement.) -o is the preferred present tense hon marker on some such verbs whose stems end in ka: e.g. mo-mā-pah-pāka (refl-hand-rdp-wash) 'he washes his hands', whose hon form is ne-mā-pah-pāk-o. Note also ne-mā-pah-pāk-u-s 'he hon will wash his hands', and contrast ki-mā-pah-pāka-lo 'he hon washes his (another, non-hon, person's) hands', with tie-mā-pah-pāk-o 'he hon washes his (another hon person's) hands'. Note that the verbs that take -o are

given in Table 10. These forms parallel the pano forms in Table 9, with the exception of the impf forms, which have an ɛ (possibly the -a 'pres' morpheme, appropriately tensed) following -low. (The second impf form is obviously a result of Squishing.) I know of no explanation for the presence of this ɛ: we will have to describe it in some ad hoc way. Our options seem to be: (1) Spell -a 'present' in this

Table 10
-lo '3rd pers hon'

| | | | |
|-----------------------------------------------------|-------------------------------|-----------------------------------------------------|--------------------------------|
| ne-maka-lo hon -give-hon refl | 'he hon gives himself' | (?)ne-maka-lu-k hon -give-hon-pret refl | 'he hon gave himself' sg |
| (?)ne-maka-lu-s hon -give-hon-fut refl | 'he hon will give himself' | ne-maka-low--ya hon -give-fut-pres?-impf refl | 'he hon was giving himself' |
| ne-maka-lu-ɛ-ya hon -give-hon-pres?-impf refl | | (same as above, in careless speech) | |
| ne-maka-lu-tɛ hon -give-hon-asp refl | | 'he hon gives himself as he goes' | |
| ne-maka-lu-ti hon -give-hon-asp refl | | 'he hon goes and gives himself' | |

Class I verbs that do not normally truncate by PSF. I have never heard the form ne-mak-o (hon:refl-give-hon), but many speakers prefer to use forms with -o over forms with -lo in the pret and fut. (I.e. they use ne-mak-u-k and ne-mak-u-s instead of ne-maka-lu-k and ne-maka-lu-s.) Several have even told me that the -lo forms are wrong. That is why I put question marks by those forms in Table 10.

I have no examples of -o in other tenses (e.g. impf or any of the -kɛ or -s class aspect markers).

spot. (2) Spell the hon marker as -low# in this environment.^{61 62} Or, (3) spell the 'impf' morpheme as -#ya following -lo. This last alternative is unattractive in that it would require a similar suppletive spelling for the suffix -n# 'irr'; witness ne-maka-low-#n#, ne-maka-lu-#n# (hon:refl-give-hon-irr) '(if) he had given himself'.⁶³ To do so would be to claim that two separate suppletions, accidentally of the same nature, occur accidentally in the same spot. Option (2) makes the unattractive claim that the o in -low#-ya and the one in -lo are suppletive; that the o in -lo is related to the u in -lu but that the o in low# is not. I prefer option (1), though I cannot argue strongly for it. If option (1) is correct, the underlying form of -lo must be -low; otherwise we would have to insert the w by a new rule. Given -low, which we argued for in the last section, the proper forms fall out.

| | |
|--------|------------------|
| BF | ne#maka-low##-ya |
| Stress | ne2makalo'w#ya |
| Squish | (ne2makalu'#ya) |

⁶¹ As far as I can tell, you must take this course if you use the solution with Final Vowel Laxing. The BF in all other forms would be -lu, and here -low# by suppletion.

⁶² This proposal fits in somewhat with what I suppose to be the historical source of the hon markers -lo (BF -low), -o (BF -ow), -owa (see below) and -wa: a morpheme *-lowa. (Langacker and Campbell give *liwa for Proto-Aztecán).

-owa is an irregular honorific marker. Like -o, it replaces the final vowel of the stem it attaches to. Stems ending in it follow the pattern of Class I verbs. E.g. nem# 'he lives' (Class II), nem-owa 'he hon lives', k-wika 'he sings' (Class I), k-wik-owa 'he hon sings', nem-owa-s, o-nem-owa-k, nem-owa-tika, 'he hon will live', 'he hon lived', 'he hon is living', respectively.

⁶³ The agentive suffix -n# (the only other one in the -ya class) does not appear after -lo 'hon'.

4. Class IV verbs

Class IV, like classes Iiowa and Iu and Ii, is quite small. The following verbs (all of which end in a in the present tense) constitute this class: ya 'go', wāla '(non-pres) come', k^wa 'eat', šilank^wa '(stomach) grumble'⁶⁴ tlah-tlama 'fish' (or archaic tlama 'hunt'), māma 'bear'. Also several verb endings seem to exhibit the same pattern of allomorphy: namely the -a 'pres' morpheme, the suffix -skiya (-s-kiya) (fut-would've) 'would've', and (probably) -tā and -tah, the non-present forms of -tā 'Verb as you go'. Some of the crucial forms are given with hesitation, even by very fluent speakers. Table 11 gives representative forms.

The second 'he ate it' form is condemned by many older speakers, though I have heard some of them use it in some cases. It seems to be used more in casual speech.⁶⁵

⁶⁴ ~~Doubtless~~ ^{clearly} related to k^wa, though šilan ^{means "insides," or some such thing} is a "oran" morpheme ~~apparently not found elsewhere~~. Some other verbs, clearly derived from k^wa, are Class I. E.g. ki-k^wa-k^wa (it-rdp-eat) 'he gnaws it', ki-k^wah-k^wa (him-rdp?/tired?/thigh?-eat) 'it (e.g. rheumatism) hurts him, makes him ache.' This may well be related to the fact that -k appears on the pret sg form of k^wa itself for some speakers, as if it were a Class I verb. (See next footnote.)

⁶⁵ There may well be a slight semantic shift involved too; I sometimes get the feeling that some intensification of the 'past' or 'completed' sense is being marked by the use of -k. Some speakers can even treat Class III verbs this way: E.g. o-ki-hto-k (past-it-say-pret:sg) 'he (already) said it (and that's that)', or o-ki-lwi-k (past-him-tell-pret:sg) 'he (already) told him (and that's that)'. Note that this involves the anomaly of the -k not conditioning either Contraction or Spirantization as it should, but rather permitting FRD, as it shouldn't. In other words, it has all the appearance of being tacked on after the verb has gone through its complete phonological derivation.

The -k also occasionally turns up in other odd places. For instance, I have documented o-mo-caku-to-k (past-refl-stick-went:to-pret) 'it went and attached itself', where -to is already pret and doesn't normally take -k.

Pittman (1953, 27) gives k^wa as a typical Class I verb. Maybe in

Table 11
Class IV verbs

| | | | |
|-----------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------|
| k ^W _i -k ^W _a it-eat | 'he eats it' | o-k ^W _i -k ^W _a past-it-eat | 'he ate it' |
| o-k ^W _i -k ^W _a -k past-it-eat-pret sg | 'he ate it' (some, esp. younger, speakers) | o-k ^W _i -k ^W _{ah} -k ^W _i past-it-eat-pret pl | 'they ate it' |
| k ^W _i -k ^W _h -s it-eat-fut | 'he will eat it' | k ^W _i -k ^W _h -ya it-eat-impf | 'he was eating it' |
| k ^W _a -lo eat-hon | 'he hon eats it' | to-mo-k ^W _a -lt ^W _{iy} -a thou-refl-eat-caus-pres | 'you hon sg eat it' |

4.1 Class IV ought to be analyzed like Class III

In the pret and fut forms, notice the alternation among the tense h, the lax a with h, and the lax a alone. These patterns hold elsewhere: k^W_{ah} appears before all the -k_i class suffixes, and k^W_h before all the -s class suffixes. We saw this same sort of alternation, in these same forms, in Class III verbs.

The obvious thing is to try to account for them in the same way. If we propose a BF k^W_{aw} and expand Contraction to include aw → h (a natural enough addition), we should be able to account for these forms as we did in Class III. The pret sg form will be produced by FRD, the pret pl form will come by Spirantization, and the fut form will be the result of Contraction.

his time it was more common for these verbs to take -k?

The claim, then, is that since Class IV verbs are patterning like Class III verbs they should be accounted for in the same way. In fact, we would be claiming that Class IV is really a sort of Class IIIa.

4.2 Problems with this analysis

4.2.1 -a 'pres'

One immediate consequence of this analysis is that we would want to give the morpheme -a 'pres' the BF -aw. This would explain why it appears tensed before -ya 'impf' and the other suffixes in its class. It would contract (just like the stem k^waw) in these cases, and suffer FRD in the present tense case, giving the right results. Quite clearly -a is exhibiting the same pattern of allomorphy as k^wa, and this would appear to be the right way to capture that generalization.

However, that gets us into problems with PSF. In our analysis of Class III verbs, we had been claiming that PSF gets rid of the -a in the appropriate places. Now we must claim that PSF is getting rid of an -aw (presumably contracted to an ɤ in preconsonantal cases.) But PSF never elsewhere deletes either a vowel-semivowel combination or a tense stem V.⁶⁶ In fact, in our analysis of Class Iu and Ii verbs we

⁶⁶It is tempting to try to claim that the verb cak^wa 'shut' gives evidence of PSF deleting the final aw on a stem. The relevant forms are these: ki-cah-cak^wa (him-rdp-close) 'he jails him', fut ki-cah-cak^wɤ-s, and pret o-ki-cah-cak. It looks like the final w of a BF ki-cah-cak^waw was deleted by FRD in the present, the aw contracted in the fut, and PSF chopped off the aw combination in the pret, feeding a rule of k^w-Delabialization (which is independently needed). However, the fut in more careful speech is ki-cah-cak^wa-s, and when the stem final vowel gets stressed before -s class suffixes, the result is clearly a and not ɤ. E.g. ki-cah-cak^wa-to 'he went and jailed him', not ki-cah-cak^wɤ-to; ki-cah-cak^wa-s-ki (him-rdp-close-fut-pl) 'they will jail him', not ki-cah-cak^wɤ-s-ki. What is going on is clearly an allophonic (and very natural) fast speechy rounding process neutraliz-

used a tense vowel (in forms like o-panu-kɿ) to block PSF.

This poses a real problem for our analysis, and I do not see any dignified way to get around it.

4.2.2 How do you predict where Contraction applies and where Spirantization?

Another perhaps worse problem is the following. Remember that in Classes III_o and III_ɿ we differentiated between those forms that underwent Contraction and those that underwent Spirantization by positing -a 'pres' in those that underwent Spirantization, letting the -a protect them from Contraction and then letting PSF get rid of the -a, feeding Spirantization. This explained why forms that underwent Spirantization in Class III were exactly the same ones that underwent PSF in Class II. -a already had to be spelled on other forms in Class III, so it was not too big a deal to extend its range to include the forms with pret tense or suffixes of the -kɿ class. Class IV, as noted above, has Spirantization and Contraction in exactly the same forms as Class III verbs, but it does not have -a on its pres and impf

ing a to ɿ in poststress position after k^w. (Note also ki-cah-2cak^wɿ-s-'kiy-a 'he would've jailed him'.) This verb, then, does not have a basic stem final aw, then, but rather an a, which can be easily enough deleted by PSF.

It appears that Pittman and the Brewers thought the same thing was happening with the verb k^wa 'eat'. Thus they wrote the future as "quicuas" (kik^was) instead of "quicuɿs" (kik^wɿs). However, (1) -k^wa has the tense vowel even when it is stressed (ki-k^wɿ-to, ki-k^wɿ-s-ki 'he went and ate', 'they will eat'). It does not appear as a in more careful speech. (2) It doesn't have the tense vowel but rather the lax vowel followed by h before suffixes of the class of -kɿ (2ki-k^wah-'tɿka (it-eat-prog) 'he is eating it'; contrast with ki-cah-2cak^wɿ-'tɿka 'he is jailing him'). Also (3) there are other verbs that pattern like k^wa (e.g. ɿya 'go', mɿma 'bear') that don't have a k^w to condition the rounding of their final a. These facts make it clear that it is not the same thing that is going on.

forms. In this way Class IV is not patterning as if it were Class IIIa. And if -a is not spelled on these verbs, we cannot explain the distribution of Contracted vs. Spirantized forms in the same way here as we did in Class III.

To put the same problem in another way, with the model we have constructed so far, in which Contraction precedes PSF which precedes Spirantization, forms like k^waw, if they can undergo Contraction at all, ought to undergo it before -k_i class suffixes as readily as before any other C-initial suffixes. In fact, they should behave just like Class Iu and Ii verbs, which we are positing to have semivowel final stems and no -a. So how can we account for the fact that they do not behave like Class Iu and Ii verbs?

4.2.2.1 Maybe -a is there

One possibility is to say that -a is spelled on Class IV verbs, even though it never shows up on the surface.⁶⁷ That would explain where Contraction takes place as opposed to Spirantization. But it would predict that the pres form would be k_i-k^waw-a and the impf form would be k_i-k^waw-h-ya. Both forms are ungrammatical. However, if we could predict the right surface forms from the posited BF's, we might be able to float the hypothesis.

And it can be done. The BF's are k_i-k^waw-aw and k_i-k^waw-aw-ya. A rule of Haplology (awaw ==> aw), ordered before Contraction (antibleeding order) would give us the desired output. Haplology

⁶⁷It seems that this was likely the case in pre-classical Aztecan. Refs.

would have no exceptions that I know of.⁶⁸

However, this is all getting pretty abstract. We are positing the presence of a morpheme (-a), which necessitates positing an ad hoc rule. This morpheme never shows up on the surface; we deduce its presence by its effects, which are similar to the effects it purportedly has in another class of verbs (Class III). Even in that class it never shows up on the surface in the crucial forms (forms with -kɨ class suffixes). It was posited there because it does show up in certain other forms of the verb (present tense and with -ya class suffixes), and it could produce the results we want in the crucial forms, given the right analysis. Add to all this abstractness and tenuous reasoning the fact that the analysis even for Class III verbs is in trouble (4.2.1), and things look pretty bad. As far as I can see, it's a case of an invisible cat, having imaginary teeth and hypothetical claws and sitting on a putative chair, which we know to be there because it keeps the mice from coming out to play. Maybe the mice just don't want to come out.

4.2.2.2 Maybe it's by arbitrary classes

That would be equivalent to an analysis that says that -kɨ and the other suffixes in its class are simply arbitrary exceptions to Contraction. That is the reason why they never condition Contraction

⁶⁸It is tempting to write $awa \Rightarrow a$ and to try to collapse this rule with the independently needed Strong Contraction (1.3.3 and 1.4.3.4). However, Strong Contraction would give # instead of a. You could make Strong Contraction give aw (and ɨy), but then you would have to do other ad hoc things to get the right forms. (E.g. Contract #w to # before C, Contract aw before wC but not before w#, let FRD apply twice to ww# configurations.) Also there are awa sequences on the surface in forms like nawatɨ 'he replies', which would have to be marked as exceptional.

but only Spirantization.

4.2.2.2.1 In Class III then, too

If we are to posit such an arbitrary distinction for Class IV, there is certainly no reason to posit anything different for Class III. All the mechanism that is there to prohibit Contraction from applying before -ḳ class suffixes in Class IV verbs will automatically prohibit it from applying in Class III verbs. And Occam's razor says we should use it instead of something else. This makes everything nice and shipshape for these Class IV verbs (we don't need to posit -a on them), and it gets us out of the problem brought up in 4.3.1—we no longer need posit -a in Class III verbs except where it occurs on the surface.

4.2.2.2.2 This means arbitrarily coincident classes, and a loss of predictive power

But there is a price to pay. One part of the cost is that we now have two arbitrarily coincident arbitrary classes. It is a totally arbitrary fact that the arbitrary class that conditions PSF is exactly the same as the arbitrary class that refuses to condition Contraction.

Another problem is that we have lost the power to predict whether certain classes of verbs will take -ḳ 'pret sg' (i.e be members of Class I) or not. Classes III, IV, Iu and Ii all end in semivowels and thus should, according to our analysis so far (3.2), be Class I. Yet only the few Class Iu and Ii verbs are. So our analysis is wrong, and the difference is going to have to be marked in an ad hoc manner.

4.2.2.2.3 Class Iu and Ii verbs must be reanalyzed.

Yet another problem is that our analysis of Class Iu and Ii verbs (3.2) is in deep trouble. They, too, we have posited, end in a lax vowel with a semivowel in BF, and the tense vowels in their surface forms come from Contraction. Yet they have tense vowels before suffixes of the class of -kɨ, which we are now claiming are environmental exceptions to Contraction. Should we say that -kɨ and -tɨka and all the rest of them are exceptional to Contraction except after Class I verbs? Forget that number. It rather looks like we'll have to make Mohammed go to the mountain, and adopt the solution with Final Vowel Laxing (3.7) for Class Iu and Ii verbs. But I sure hate to do that.

4.3 Miscellaneous

4.3.1 Where do the w's go?

The form k^wa-lo 'he hon eats it' is irregular in two ways. (1) There is no object marker. I know of no other case where the object marker is so dropped.⁶⁹ (2) k^wa-lo has a lax vowel with no semivowel. I do not know why this is--I assume it is simply irregular in this as in not having the object marker. Two other Class IV verbs for which I have documented parallels to this form are māma 'bear', which has the form ki-māmā-lo 'he hon bears it', and tlah-tlama, 'fish', which has the form tlah-tlamā-lo. In both cases Contraction has taken place.

⁶⁹Brewer and Brewer (1962) give the more expected form ki-k^wa-lo. (I would really predict ki-k^wɨ-lo, from Contraction, like the hon forms of māma and tlah-tlama. See point (2) above.) I have not heard this used by Tetelcingans, at least since I was aware of the odd form and started listening for a more normal one, and have been told flatly that it is wrong.

māma also has an applicative form, to-mo-māmā-līy-a (thou-refl-bear-applic-pres) 'you hon sg bear it', where Contraction again takes place. However, it does not appear in the causative ki-māma-ltīy-a (him-bear-caus-pres) 'he loads him up'. It doesn't seem likely that Deactivation is getting rid of the stem-final w; Deactivation should do that before -līy and not before -ltīy, and here we have the opposite results. Similarly, tlah-tlama Contracts before the applicative (to-mo-tlah-tlamā-līy-a (thou-refl-rdp-hunt-applic-pres) 'you sg hon fish'). And an unadorned a shows up on the end of the stem of a couple of Class IV verbs when they are nominalized with -l-ī: tlā-k^wa-l-ī (unspec-eat-nr-abs) 'food', tlā-māma-l-ī (unspec-bear-nr-abs) 'burden', in contrast with Class III forms where Contraction takes place before -l-ī, e.g. tlā-htu-l-ī (unspec-say-nr-abs) 'word', from tlā-htow-a 'he speaks'; or tlah-tlaku-l-ī (rdp-ruin-nr-abs) 'sin', from tlah-tlowi-l-ī 'light', from tlah-tlowiy-a (rdp-shine-pres) 'it shines'. tlah-tlakow-a 'he sins', [^] We can explain the Contracted applic forms by saying that the final w of Class IV verbs is not -w 'active', and that thus Deactivation doesn't affect them. But we have no way to account for the appearance of the lax vowel alone on these nominalized and causative forms. Apparently we'll just have to say that they're irregular, and are spelled with just an a at the end of their stems, like k^wa-lo. Admittedly, they are few. But I don't like to do this; it can't be just an accident that they vary in just that way, and in the same nominalized form for different verbs. Perhaps we need a new (very minor) rule of w-Deletion to give us these stems.

w-Deletion (minor rule)

w → ∅ / ___ ≠ [in Class IV forms with -l-ī or -ltīy⁷⁰
[in the form 'he hon eats']

At this point I personally half feel like calling the whole class irregular and, following illustrious linguistic precedent, leaving it out of the reckoning—it's certainly small enough. Especially considering how the native speakers themselves hesitate over some of the forms, and how these verbs and endings have so many other idiosyncrasies and irregularities (see next sections). Perhaps we should follow Bill Sischo's advice and teach them to talk Aztec the right way.

4.3.2 The verbs 'go' and 'come'

The verbs ya 'go' and wāla 'come' (non-pres) never seem to have -k affixed to their pret sg forms as all the other Class IV verbs do (except those endings like -a and -s-kīya which have no pret forms).⁷¹

ya has an irregular plural form in the present: yawī 'they go'. If this is divided ya-wī, -wī is unique as a plural marker. If it is divided yaw-ī, as the solution we are adopting demands, it shares the same plural as the irregular verbs wic-ī 'they come', ayok-ī 'they are absent', and several verbs with the (aspect marker?) suffix -c 'hither' (which is certainly related to wic 'come'). For instance, kī-wika-c-ī (him-take-hither-pl) 'they bring him'. So here is direct evidence (the only direct evidence I know of) of there being a w on the end of a Class IV verb.⁷²

⁷⁰ If we had been able to keep semivowel-final stems in Class Iu verbs we could have used the same rule to account for our forms with -wīy, but now we cannot, because those stems are tense-vowel final.

⁷¹ Although the generalized form of k^w-a, tla-k^w-a (unspec-eat) 'he eats (his food)', is quite common, I do not recall ever hearing it with a final -k either.

⁷² Many speakers (especially younger ones) pronounce this form as yawe (they change all final ī's to e's). For them this might be reanalyzed as an instance of ya plus the plural -we, which appears on the (also present) aspect markers -ti, -ki, and -tī. Of course, it needn't have reanalyzed; they also say wic-e 'they come' etc.

4.3.3 Fuzzy grammaticality

People seem to be fuzzy about forms for some of these verbs, mostly the ones with aspect markers. I have fairly often been given a form with -to (-s class) preceded by an a rather than the expected h; for instance I have heard tla-k^wa-to instead of tla-k^wh-to 'he went to eat'. If challenged, the speaker usually corrects himself, though often after quite a bit of hesitation and pondering. I have also been given forms with -tika (-k_i class) without an h, or even with h preceded by a tense vowel. For instance, tla-k^wa-tika or tla-k^wah-tika⁷³ instead of the "correct" tla-k^wah-tika 'he is eating'. Again, if I repeated the form and asked if it was right, it would be corrected after some pondering.

5. Conclusion

We have looked at many forms in several different classes of Aztec verbs, and have seen that many phonological alternations that show up in their stems and suffixes can be described by more or less regular rules. The accounting that we originally proposed for Class III verbs helped us in accounting for Class II_{owa} verbs and even more for Class I_u and I_i verbs. However, the data from Class IV verbs caused us to reconsider part of that analysis, and to posit ad hoc classes where before none were needed. Doing so also caused us to change our analysis for Class I_u and I_i forms to a less attractive one.

⁷³This form may be a result of the allophonic rule of Rounding discussed in note 66. I think I have also heard ki-māmāh-tika, which couldn't have, but I don't have it documented.

I am left feeling like Linus, sitting in the sandbox as the rain pours down and reduces his elaborately sculpted castle to a shapeless mound. "There is a lesson to be learned here somewhere, but I am not sure what it is." Perhaps the lesson is simply that languages are not as logical as we would like them to be. Certainly a lesson is that we had better check all kinds of nooks and crannies of the language for counter-examples to our rules, and that we are likely to find them. I hope (and believe) it is not that there is no point to building sand castles or doing linguistics.

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