Reconstructing Lost Phonemes in Huehuetla Tepehua Using "Affectionate Speech"¹

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1. Introduction

Huehuetla Tepehua² (hereafter, HT) is an endangered, underdocumented, indigenous language spoken by fewer than 1,000 people in the town of Huehuetla in the Mexican state of Hidalgo, northeast of Mexico City. It is one of the three languages that make up the Tepehua branch of the Totonacan language family. While conducting linguistic fieldwork on HT, I encountered a particular speech style called "affectionate speech." HT speakers translate affectionate speech into Spanish as the diminutive, and it is used when the speaker feels great affection for or is much older than the addressee.

Affectionate speech is more than an interesting social phenomenon; it has proven to be a potential tool in reconstructing two lost phonemes in HT. Originally, the phonemic inventory of HT included a glottal stop, a plain voiceless uvular stop, and a glottalized voiceless uvular stop (Arana, 1953; Bower, 1948; Herzog, 1974; Herzog, n.d.; Kryder, 1987; Watters, 1988). However, the glottalized uvular stop merged with the plain uvular stop, and now the plain uvular stop is in the process of merging with the glottal stop (Smythe, 2002). These mergers are shown below in (1).

² The phonemic inventory of HT is as follows: stops /p, t, k, q/, glottalized stops /p', t', k', (q')/, glottal stop /?/, nasals /m, n/, fricatives /s, \int /, affricates /ts, t \int /, glottalized affricates /ts', t \int '/, laterals /l, $\frac{1}{2}$, approximants /w, y, h/, trill /r/, flap /r/, and vowels /i, e, a, o, u/. Vowel length is distinctive.

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Today, the presence of a plain uvular stop in an HT speaker's phonemic inventory falls on an age-graded continuum; the older the speaker, the more likely s/he is to have uvular stops. In the speech of the younger HT speakers, the uvular stop has been completely replaced by the glottal stop (Smythe, 2002).

I discovered that affectionate speech might be useful in the reconstruction of the lost uvular phonemes quite by accident, when my 46-year-old principal consultant, don Nicolás, told me that the HT word for 'Otomí person' is [*ts'o?on*] and the HT word for 'Otomitito' is [*ts'uk'un*]. I was particularly interested in the fact that the glottal stop changed to a glottalized velar stop. After checking this process with other words containing glottal stops, I found that some glottal stops fronted to a plain voiceless velar stop, others fronted to a glottalized voiceless velar stop, and still others did not change at all. This led to my current hypothesis, below in (2), that the glottal stops that were historically uvulars are the ones that now front to velars in the context of affectionate speech; in other words, in affectionate speech, an historic plain uvular stop fronts to a plain velar stop, and an historic glottal stop does not change at all.

(2) Affectionate speech hypothesis: Historic sound > Regular speech \rightarrow Affectionate speech³ * $q > [q] \sim [?] \rightarrow [k]^4$ * $q' > [q] \sim [?] \rightarrow [k']$ * $2 > [?] \rightarrow [?]$ (no change)

If this is the case, then affectionate speech can be used to reconstruct the lost glottalized uvular stop and the nearly lost plain uvular stop.

In section 2, I discuss the phenomenon and mechanics of affectionate speech in more detail, then, in section 3, I examine the ability of HT speakers of various ages to productively use affectionate speech. In section 4, I discuss the effectiveness of using affectionate speech as a reconstructive tool for lexical research. And in section 5, I summarize my conclusions.

³ Note the two different arrows: > indicates a diachronic change, and \rightarrow indicates a synchronic change.

⁴ A single asterisk * indicates a reconstructed form. A double asterisk ** indicates an unacceptable form.

2. Affectionate Speech

"Affectionate speech," or "el habla con cariño," is the name that my principal consultant, don Nicolás, gave to this speech style, which is similar to baby talk in its social use. According to don Nicolás, affectionate speech can be used when an older speaker is addressing someone much younger than him/herself and when the speaker wants to indicate affection towards the addressee; for example, it is used when a parent or grandparent talks to a young adult or child. I observed both men and women using affectionate speech in Huehuetla, but I actually noticed more men than women using it. However, I did not hear this speech style used very often, and, according to don Nicolás, affectionate speech is used much less today than it was in the past. I presume that this is because the Tepehua people mostly speak to their children and grandchildren in Spanish now.

HT speakers usually translate affectionate speech into the Spanish diminutive, but it is not the equivalent of the Spanish diminutive for two reasons. First, the Spanish diminutive is a morphological process, while affectionate speech is a phonological process. And, second, when I tried to elicit affectionate speech using the Spanish diminutive, I was given the HT equivalent of *little X*. For example, if I asked for *birdy*, or 'pajarito,' I was given [*lakat'ikst'i ts'o?*], which literally means *little bird* or 'pájaro pequeño'. I found that I had to elicit affectionate speech by requesting that the speaker pretend to be talking to a child.

Affectionate speech involves four sets of phonemic changes: First, the voiceless palato-alveolar fricative and affricates front to the corresponding alveolar consonants, as shown below in (3).

(3)	Chang	e 1: Palato-alveolar fronting: [ʃ, tʃ, tʃ']	\rightarrow [s, ts, ts']
	a.	[∫a:nti] → [s a:nti]	'flower'
	b.	[paqa t∫ u]~[pa?a t∫ u] → [paka ts u]	'wing'
	c.	$[kikwint J'u] \rightarrow [kikwints'u]$	'whiskers'

In example (3a), the $/\int$ in [*fanti*] fronts to /s/ in [*santi*]. In example (3b), [*paqatfu*] represents the speech of the older speakers, and [*pa?atfu*] represents the speech of the younger speakers. In both cases, the $/t\int$ fronts to /ts/ in [*pakatsu*]. And in example (3c) the glottalized /tf'/ in [*kikwintf'u*] fronts to glottalized /ts'/ in [*kikwints'u*]. Note that the quality of glottalization on the palato-alveolar affricate is carried over to the alveolar affricate.

Second, the voiceless lateral fricative delateralizes only in syllable initial position, shown below in (4).

(4)	Chai	nge 2: Delateralization:	$[4] \rightarrow [s] /$	σ[_
	a.	[pu:. 4 tuh] → [pu:. s t	tuh]	'toad'
	b.	[ta ł p] → **ta s p	'hill'	

In example (4a), the $/\frac{1}{4}$ in [*purltuh*] delateralizes to /s/ in [*purstuh*]. The double asterisk in example (4b) indicates an unacceptable form; [*talp*] cannot change to ***tasp*. Delateralization is limited to syllable initial position because there is a separate phonological process that devoices the *voiced* lateral in syllable final position.

Third, the mid vowels raise to high vowels. According to Watters (1988), Tepehua previously had a three vowel system, /i, u, a/, and the mid vowels, /e, o/, appeared only in the context of a uvular stop and at certain morpheme boundaries. The mid vowels have since become phonemic, but they are still scarce except in some loan words, at certain morpheme boundaries, and in the context of a glottal stop that was historically a uvular stop. Below in (5a), the mid vowels in [*ts'oqon*]~[*ts'oqon*] raise to high vowels in [*ts'uk'un*]. In (5b), the /e/ in *temsum* raises to /i/ in *temsum*.

(5)	Chan	ge 3: Mid vowel raising: $[e, o] \rightarrow [i, u]$	
	a.	*ts'uq'un > [ts'oqon]~[ts'o?on] \rightarrow [ts'uk'un]	'Otomí
	b.	$[te:nsu:n] \rightarrow [ti:nsu:n]$	'goat

And, fourth, the historical voiceless uvular stops front to voiceless velar stops, shown below in (6).

(6) Change 4: Uvular fronting:
$$/*q, *q' \rightarrow [k, k']$$

a. $*t \int aqa? > [t \int aqa?] \rightarrow [t \int aka?], **t \int akak 'house'$
b. $* \int q'an > [\int qan] \rightarrow [sk'an] \rightarrow [sl'an]$

Example (6a) is revealing because the reconstructed form contains both a plain uvular stop between the vowels and a glottal stop at the end of the word. In regular speech, the older HT speakers pronounce the plain uvular stop and the glottal stop, while the younger speakers pronounce two glottal stops. In affectionate speech, everyone fronts the first stop to a velar, but no one fronts the word-final stop to a velar, which indicates that this particular glottal stop was not historically a uvular. In example (6b), I have reconstructed a glottalized uvular stop even though, in regular speech, the older speakers pronounce a plain uvular stop and the younger speakers pronounce a glottal stop. I chose to reconstruct the glottalized uvular because, in affectionate speech, this sound fronts to a *glottalized* velar. Recall from the discussion of (3), above, that the quality of glottalization on the palato-alveolar affricate carried over to the alveolar affricate in palato-alveolar fronting, so it is logical that the same would happen in uvular fronting.

In addition to signaling affectionate speech, all of the above mentioned phonemic alternations are also found in HT lexical sets that are based on the same root. In all of the lexical sets in (7), a phonemic alternation corresponds to a slight change in meaning.

(7)	Н٦	lexical sets		
	a.	/ʃaqʃ /	[ʃaqʃ]~[ʃaʔʃ]	'fig tree'
		/saqs/	[s aq s]~[s a? s]	'candy, sweet'
	b.	/ t∫' a q' a?iy/	[tʃ' a q a?iy]~[tʃ' a ? a?iy]	'he breaks it apart with his
				hand (e.g. bread)'
		/ ts' a k' a?iy/	[ts' a k' a?iy]	'he bites it apart'

Smythe, S.

c.	/ q'o :nta/	[qo: nta]~[?o :nta]	'fat'
	/ k'u: nta/	[k'u :nta] 'swol	len'
d.	/ ∫q a q ałt∫/	[∫q aqałt∫]~[∫? a?ałt∫]	'it (the day) cleared up'
	/ sk akałt∫/	[sk a k ałt∫]	'it (the day) warmed up'

This phonemic alternation of consonants exists in many, if not all, of the Totonacan languages. The alternation involves at least three different phonemic sets, /s~j~4/, $/ts(') \sim t \int (')/,$ and $/k(') \sim q(')/,$ and usually distinguishes semantic extension, affection, or variations in intensity (McQuown, 1940; Aschmann, 1973; Bishop, 1984; Levy, 1987; and MacKay, 1999). However, as MacKay (1999) points out, the phonemic alternation is not always accompanied by a change in meaning. McQuown (1940) was the first to note the phonemic alternation between /k/ and /q/ in words derived from the same root in Coatepec Totonac, but he gave only one example and did not extend his analysis to the other phonemic sets. In the subsequent literature, this phonemic alternation has been called juego simbólico, 'symbolic set,' by Aschmann (1973) and simbolismo fonético, 'phonetic symbolism,' by Levy (1987) for Papantla Totonac, consonant play by Bishop (1984) for Northern Totonac, and sound symbolism by MacKay (1999) for Misantla Totonac. This phenomenon has not previously been described in the Tepehua literature.

3. Productivity of Affectionate Speech

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After testing affectionate speech with don Nicolás, I decided to test it with other HT speakers to see how productive a speech style it was and to test its usability as a reconstructive tool for the lost uvulars. Using the work of previous researchers (Arana, 1953; Bower, 1948; Herzog, 1974; Herzog, n.d.; Kryder, 1987; Watters, 1988), I created a list of forty-three lexemes that reportedly contained either a glottal stop, a plain uvular stop, and/or a glottalized uvular stop. I recorded this word list with thirteen HT speakers, three males and ten females. In order to analyze the results, I divided the speakers up into two groups: the older speakers who still retained the plain uvular stop and the younger speakers who had all lost the plain uvular stop. This grouping is shown in the table in (8) below.

(8) Age grouping for affectionate speech test		
	(8)	Age grouping for affectionate speech test

Group	Members
Older (>70, retain /q/)	M76, F71, F82
Younger (<70, no /q/)	M44, M46, F25, F28, F29,
	F36, F38, F41, F48, F53

In all of the tables shown in examples (9) through (15), the percentages refer to the percentage of times that the given sound change was a possibility and that speakers did or did not make the change. Some of the forty-three lexemes contained only one phoneme that could potentially change in affectionate speech, while other lexemes contained several phonemes that could potentially change.

After analyzing the results of the recordings, I found that, for the first affectionate speech change, palato-alveolar fronting, shown below in (9), the older group fronted the palato-alveolar consonants to alveolars 83.5% of the time that this change was possible. and the younger group fronted them 84% of the time. In other words, both groups produced this phoneme change more or less equally, and both groups produced the change the majority of the time that they encountered a palato-alveolar consonant.

Change 1: [$f, tf, tf'] \rightarrow [s, ts, ts']$	
Group	$[\int, t \int, t f'] \to [s, ts, ts']$	No change
Older	83.5%	16.5%
Younger	84%	16%

Regarding change 2, the delateralization of a syllable-initial voiceless lateral, shown in (10), I found that the older group produced this phoneme change every time it was an option, while the younger group delateralized only half the time. The fact that the younger group made this sound change only half the time that they encountered it indicates that they are less familiar with, or less comfortable with, this phoneme change than the older speakers are. Given the low frequency of application of this sound change in the younger speakers, I suspect that delateralization is being lost from the affectionate speech repertoire.

10)	Change 2: [4]	\rightarrow [s] / σ [_	
	Group	$[4] \rightarrow [s] / \sigma[$	No change
	Older	100%	0%
	Younger	50%	50%

Regarding change 3, mid vowel raising, shown below in (11), the older group raised the mid vowels to high vowels 95.5% of the time they encountered them, and the younger group raised the mid vowels 88% of the time. Since all the speakers produced this phoneme change the majority of the time, it was the most robustly productive of all of the affectionate speech changes.

Change 3: $[e, o] \rightarrow [i, u]$			
Group	$[e, o] \rightarrow [i, u]$	No change	
Older	95.5%	4.5%	
Younger	88%	12%	

Thus far, we've seen that change 1, palato-alveolar fronting, and change 3, mid vowel raising, are extremely productive phonemic changes in the context of affectionate speech. We've also seen that change 2, delateralization, is extremely productive for the older group, but only partially productive for the younger group. The results for change 4, in which the historic uvular stops front to velar stops, are much more difficult to interpret.

In the table in (12), below, the plain uvular stop alternates with the glottal stop. This alternation reflects the fact that, in regular speech, the older speakers pronounce a uvular stop and the younger speakers pronounce a glottal stop. In this table, we see that the older group changed their uvular stop to a plain velar stop more often than they changed it to a glottalized velar stop, and they never left the uvular stop unchanged when speaking affectionately.

(9)

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(11)

Change 4: $[q] \sim [?] \rightarrow [k, k']$				
Group	$[q] \sim [?] \rightarrow [k]$	$[q]\sim[?]\rightarrow[k']$	No change	
Older	66%	34%	0%	
Younger	53%	33%	14%	

The younger speakers changed their glottal stop to a plain velar stop more often than they changed it to the glottalized velar stop. They left their glottal stop unchanged 14% of the time, implying that a few of them have some confusion between their glottal stop that corresponds to the *uvular* stop of their elders and their glottal stop that corresponds to the *glottal* stop of their elders. Nevertheless, given that the older speakers never failed to front the uvular stop and that the younger speakers rarely failed to front the glottal stop, this sound change is also extremely productive. Note that the percentage of times that the older group changed their uvular stop to a glottalized velar stop is remarkably similar to the percentage of times that the younger speakers changed their glottal stop to a glottalized velar stop. This implies that, even though the older and younger speakers no longer pronounce this sound the same in regular speech, they still, to some degree, perceive it to be the same sound, and they still share intuitions about the quality of glottalization.

The table in (12) above does not reveal anything about the accuracy of carry over of the quality of glottalization between regular speech and affectionate speech because the modern pronunciation of the historic uvular stops does not maintain both the glottal and the uvular qualities. Therefore, in order to better examine the results of uvular fronting, I now turn to Herzog's (n.d.) unpublished Tepehua Dictionary, the most comprehensive of all the existing Tepehua materials, and I work under the assumption that the spellings in it historically reflect the way the glottal stop, the plain uvular stop, and the glottalized uvular stop were pronounced before the two mergers shown in example (1). Thus, the reconstructed phonemes in tables (13), (14), and (15) are assumed from Herzog (n.d.).

,	= 1 - [1] - [1] - [1]				
	Group	No change	$*? > [?] \rightarrow [k]$	$*? > [?] \rightarrow [k']$	
	Older	100%	0%	0%	
	Younger	85.5%	9%	5.5%	

(13) Change 4: $*? > [?] \rightarrow [?]$

(12)

The table above in (13) shows instances in which Herzog (n.d.) transcribed a glottal stop and in which all HT speakers pronounced a glottal stop in regular speech. In other words, these are the results for the percentage of times an historic glottal stop showed up on the lexeme list. Since all HT speakers still pronounce the historic glottal stop as a glottal stop, I did not expect any of the speakers to front this phoneme. The older group, indeed, maintained this glottal stop in affectionate speech 100% of the time; in other words, they never fronted it. While the younger group also maintained this glottal stop in affectionate speech the majority of the time, they sometimes fronted the glottal stop to either the plain or glottalized velar stop. However, they did this only word-initially, indicating that, even though they do not pronounce the uvular stop, they still perceive the uvular stop and the glottal stop as different sounds, except in word-initial position.

The table in (14) below shows the results for instances in which Herzog (n.d.) writes a plain uvular stop, the older speakers pronounce a plain uvular stop, and the younger speakers pronounce a glottal stop. My expectation was that all HT speakers would from their regular speech stop to a plain velar stop in affectionate speech, and this turned out to

be the case. The older speakers changed their plain uvular stop to a plain velar stop in affectionate speech the majority of the time. They unexpectedly changed it to a glottalized velar stop only 16% of the time, and they never failed to front the phoneme when speaking affectionately. The younger speakers changed their glottal stop to a plain velar stop in affectionate speech the majority of the time. They unexpectedly changed it to a glottalized velar only 15% of the time. They did not front the phoneme at all 18% of the time, implying that some of them now perceive this glottal stop that descended from the historic uvular stop to be the same as the glottal stop that descended from the historic glottal stop.

(14) Change 4: $*q > [q] \sim [?] \rightarrow [k]$

	Group	$*q > [q] \sim [?] \rightarrow [k]$	$*q > [q] \sim [?] \rightarrow [k']$	No change	
	Older	84%	16%	0%	
	Younger	67%	15%	18%	

The table below in (15) shows the results for the instances in which Herzog (n.d.) writes a glottalized uvular stop, the older speakers pronounce a plain uvular stop, and the younger speakers pronounce a glottal stop in regular speech. Here, my expectation was that the HT speakers would front their regular speech stop to a glottalized velar stop in affectionate speech the majority of the time, but this did not turn out to be the case.

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Group	$*q' > [q] \sim [?] \rightarrow [k']$	$*q' > [q] \sim [?] \rightarrow [k]$	No change
Older	52%	48%	0%
Younger	51.5%	43%	5.5%

The older group changed their uvular stop to a glottalized velar stop as expected, but only 52% of the time. They unexpectedly changed their uvular stop to a plain velar stop 48% of the time. However, they never failed to front the phoneme when speaking affectionately. In these same instances, the younger group changed their glottal stop to a glottalized velar stop as expected, but only 51.5% of the time. They unexpectedly changed their glottal stop to a plain velar stop 43% of the time, and they did not front the phoneme at all 5.5% of the time.

4. Affectionate Speech as a Reconstructive Tool

Assuming that Herzog's (n.d.) spellings represent the historic phonemes, the results shown in tables (14) and (15) indicate that affectionate speech is useful in the reconstruction of the *uvular* quality of the stop, but that it does not reliably predict the quality of *glottalization* on the uvular. However, I am not convinced that Herzog's spellings accurately reflect the history of the phonemes in question for three reasons. First, according to the examples in Herzog's dictionary, the glottalized uvular stop occurs only prevocalically and never before a consonant or at the end of a word. However, according to my own field notes, the other glottalized stops , /p', t', k'/, can occur before a consonant and word finally, so I would expect the glottalized uvular stop to do the same. It just happens that glottalized stops are much harder to hear in these environments.

Second, when I compared the affectionate speech of the older speakers to that of the younger speakers on a word-by-word basis, I found a high frequency of agreement in their answers. Where the older speakers fronted to a plain velar, the majority of the younger

speakers did, too; and where the older speakers fronted to a glottalized velar, so did the majority of the younger speakers, indicating that the two groups share the same intuitions about glottalization.

And, third, in many cases, the majority consensus of the speakers regarding the quality of glottalization conflicted with Herzog's (n.d.) spellings. A good example of such a divergence can be seen in the Tepehua word that refers to the Tepehua people, shown in (16) below.

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(16)	The quality of glottalization on the uvular/velar stops in Tepehua			
	a.	ma q' ał q' ama?	Herzog (n.d.)	
	b.	ma q ał q ama?	Older HT speakers, regular speech	
	c.	ma ? a ł? ama?	Younger HT speakers, regular speech	
	d.	ma k ał k ama?	All HT speakers, affectionate speech	

Herzog spells this word with two *glottalized* uvular stops and a glottal stop at the end. In regular speech, the older speakers pronounced this word with two plain uvular stops and a glottal stop at the end, and the younger speakers pronounced it with three glottal stops. In affectionate speech, 100% of the speakers pronounced this word with two *plain* velar stops and a glottal stop at the end. No one pronounced it with glottalized velars, and, in fact, don Nicolás corrected my pronunciation when I attempted to say it with glottalized velars instead of plain velars. Given, these three caveats, my instinct is to follow the intuitions of the native speakers regarding the quality of glottalization and to reconstruct a glottalized uvular where the majority of them produce a glottalized velar in affectionate speech.

5. Conclusion

In conclusion, although affectionate speech is not used as frequently as it once was, it is still a productive speech style. Of the four phonemic changes that make up affectionate speech, only change 2, delateralization, is not robustly productive for all speakers. Regarding the usefulness of affectionate speech in the reconstruction of the lost glottalized uvular stop and the nearly lost plain uvular stop, affectionate speech can be used to reconstruct the uvular quality of the lost phonemes, which is helpful when working with a younger speaker who has lost both the uvular stops. However, its usefulness in reconstructing the quality of *glottalization* is debatable because the intuitions about glottalization of the native speakers sometimes contradict the previous research findings.

Finally, I'd like to mention the significance of affectionate speech. First, it is a synchronic process that can be utilized in the reconstruction of a diachronic process. Second, affectionate speech is an example of how the social use of language can shed light on grammatical aspects of language. And, third, affectionate speech is an example of a speech style that is falling out of practice in Huehuetla Tepehua. Had I started studying this language a generation later, I would probably never have known of its existence.

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