

Two developments of Proto-Zapotec *ty and *tty

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1. Introduction

This paper discusses two interesting developments that have affected Proto-Zapotec *ty and *tty (Benton 1988; Kaufman 1994-2007). The first of these has to do with an exceptional behavior of these segments at the beginning of the second root of nominal compounds and after certain proclitics. The second development introduces a previously unreported type of nominal allomorphy in Papabuco and Valley Zapotec that has resulted from a stress-related split of *ty. The paper is organized as follows: section 2 provides an overview of the regular developments of *ty and *tty, the development of these consonants in second members of compounds and after proclitics is discussed in section 3, and section 4 focuses on the split of *ty that has served as the source of the nominal allomorphy in Valley and Papabuco Zapotec mentioned above.

2. Regular developments of *ty and *tty

The Zapotec language family is spoken mainly in the State of Oaxaca, Mexico, and is divided into the following five branches: Northern, Central, Southern, Western, and Papabuco (Kaufman 1994-2007). The historical study of Zapotec began with Swadesh's (1947) reconstruction of Proto-Zapotec phonology; later studies include Upson and Longacre (1965), Fernández (1995), Suárez (1990), Benton (1988), and Kaufman (1994-2007). The last study is the most complete reconstruction of Proto-Zapotec phonology and lexicon to date, and it will be used as the basis of the following observations.

Kaufman (1994-2007), along with several of the earlier studies, assumes that the phonemic system of Proto-Zapotec was based on an opposition of single and geminate consonants;¹ along with Benton (1988), that study also reconstructs the single/geminate pair *ty/*tty, whose regular development in the modern varieties may be summarized by means of the following table. Although neither of the above studies discusses the surface phonetics of *ty and *tty, the range of their reflexes in modern Zapotec seems to suggest occlusive (alveo)palatal articulations.

Table 1. Regular development of Proto-Zapotec *ty and *tty²

	*tty before *i	*tty elsewhere	*ty before *i	*ty elsewhere
Northern Zapotec				
Zoogocho	ʃ	tʃ	ʒ	dʒ
Yatzachi	ʃ	tʃ	ʒ	dʒ
Cajonos	ʃ	tʃ	ʒ	dʒ
Yaganiza	ʃ	tʃ	ʒ	dʒ
Yalálag	tʃ	tʃ	ʒ	ʒ
Atepec	ts-, -tts-	tʃ	ts	r
Yareni	ts	tʃ	s	r
Choapan	tʃ	tʃ	dʒ	r
Rincón	tʃ	tʃ	dʒ	r
Central Zapotec: Isthmus subbranch				
Juchitán	tʃ	tʃ	dʒ	r
Guevea	ts	tʃ	dz	r
Quiavicuzas	ts	tʃ	ts	r
Central Zapotec: Valley subbranch				
Córdova's	<ch>	<t(h)>	<ch>	<t ~ r>
Ayoquesco	tʃ	tj	dʒ	r
Tilquiapan	tʃ	tj	dʒ	r
Tejalapan	tʃ	tj	tʃ / ___ ¹ j / ' ___	r
Ocotlán	tʃ	—	dʒ	r
Quiegolani ³	tʃ	tʃ	dʒ	r

¹ Modern Zapotec varieties distinguish consonants in terms of “fortis/lenis”; in certain positions (i.e., intervocalically), this contrast may involve an opposition of length.

² Dashes represent gaps in the available data, which for most Zapotec varieties is incomplete. The sources of the data are referenced in Operstein (2008).

³ This variety is usually classified as southern, but the pattern of the development of *tty, *ty, *ttz, and *tz suggests that it may need to be reclassified as Valley Zapotec (cf. Operstein 2008 for details).

Santo Domingo Albarradas	tʃ	tj	dʒ	r before ¹ , d after ¹
Santa Catarina Albarradas	tʃ	tj	dʒ	r before ¹ , dj after ¹
Mitla	ts	tj	dz	r before ¹ , d after ¹
Guelavía	ts	tj	dz	r before ¹ , dj after ¹
Chichicapan	ts	tʂ	dz	r before ¹ , dz after ¹
Ocoatepec	ts	tj	dz-, -z	r before ¹ , dj after ¹
Quiaviní	ts	tj	z	r before ¹ , dj after ¹
Güilá	ts	tj	s	r before ¹ , dj after ¹
Southern Zapotec				
Xanaguía	ts	tʃ	dz	dʒ
San Francisco Ozolotepec	ts	tʃ	ts ~ dz	tʃ ~ dʒ
Quiquitani	ts	tʃ	ts ~ dz ⁴	tʃ ~ dʒ
San Juan Mixtepec	ts	tʃ	dz	r
Xanica	ts	tʃ	dz	r
San Agustín Mixtepec	ts	tʃ	s	r
Ozolotepec	ts	tʃ	ts ~ s/z ⁵	r
Miahuatlán	s	tʃ	z	r
Amatlán	tʃ	tʃ	ʒ	r
Coatecas Altas	tʃ	tʃ	ʒ	r
Lapaguía	tʃ	tʃ	dʒ	r
San Baltazar Loxicha	t	t	t-, -d	t
Santa María Coatlán	t̥	t̥	t	t̥
Papabuco				
Texmelucan	c	c	r before ¹ , j after ¹	r before ¹ , j after ¹
Zaniza	tʃ	tʃ	r before ¹ , dʒ after ¹	r before ¹ , dʒ after ¹
Western Zapotec				
Lachixío	tʃ	tʃ, kj (pattern unclear)	r before ¹ , tʃ after ¹	r
Asunción	tʃ	tʃ, kj (pattern unclear)	ts, ʃ, z, (pattern unclear)	r, tʃ (pattern unclear)

⁴ The distribution of /ts/ and /dz/ is not clear from the available data.

⁵ Both /s/ and /z/ are attested word-finally.

As may be seen from Table 1, the individual varieties may attest one or both of the following two innovations: (i) split of one or both phonemes before Proto-Zapotec *i, and (ii) split of *ty into some type of coronal obstruent after, and a tap before, lexical stress. The development in (i) took place in Northern, Central, and Southern Zapotec exclusive of Coatlán-Loxicha, and may be exemplified with the development of *laʔtʔyiʔ ‘valley’ and *k-tyoppa ‘two’.⁶

(1)	*laʔtʔyiʔ ‘valley’	>	Zoogocho (Northern)	<i>lafeʔ</i>
			Quiavini (Central)	<i>laaʔts</i>
			Quioquitani (Southern)	<i>letsʔ</i>
	*k-tyoppa ‘two’	>	Zoogocho (Northern)	<i>tʃop</i>
			Quiavini (Central)	<i>tjoʔp</i>
			Quioquitani (Southern)	<i>tʃop</i>

The development in (ii) occurred in Papabuco, (possibly) Western, and part of Valley Zapotec, and may be exemplified with the development of *ʔtyitta ‘bone’ and *ʔkatyi ‘seven’ in Texmelucan (Papabuco) Zapotec.

(2)	*ʔtyitta ‘bone’	>	<i>rit</i>
	*ʔkatyi ‘seven’	>	<i>gaʃ</i>

There is evidence to suggest that the development in (ii) is chronologically the more recent of the two. Thus, in certain Valley varieties that attest both developments, *ty is not subject to stress-related split before *i. For example, *ty in *ʔtyiʔla ‘clay griddle’, in which it is found in a stressed syllable, and *ty in *ʔkatyi ‘seven’, in which it is found in a posttonic syllable, produce identical results (cf. 3). If stress-related split of *ty had

⁶ Sequences with an initial *k are assumed to have developed in the same way as the corresponding geminates (Kaufman 1994-2007).

preceded its pre-**i* split, we would expect to find a /r/-type reflex in **'tyi?la* and a /d(j)/-type reflex in **'katyi*, these being the regular results of the former development (cf. 4).

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|-----|--------------------------------------|---|----------------------------|--------------------|
| (3) | <i>*'tyi?la</i> ‘clay griddle’ | > | Quiaviní <i>zee'illj</i> , | Mitla <i>dzyl:</i> |
| | <i>*'katyi</i> ‘seven’ | > | Quiaviní <i>gàaz</i> , | Mitla <i>gadz</i> |
| (4) | <i>*'tyo?wa</i> ‘mouth’ | > | Quiaviní <i>ru'u</i> , | Mitla <i>ro'</i> |
| | <i>*'k^w-etya</i> ‘turkey’ | > | Quiavini <i>bu'udj</i> , | Mitla <i>bəd</i> |

In addition to the regular developments summarized in Table 1, a number of Zapotec varieties show special treatments of one or both phonemes in selected environments. These may involve, e.g., word-initial, word-final, or preconsonantal position, and may entail additional changes by comparison with the regular reflex of the corresponding phoneme. For instance, (5a) below illustrates regular treatments of **ty* before **i* in Atepec (Northern) and Mitla (Central/Valley) Zapotec. By contrast, (5b) shows that the reflex of **ty* in a preconsonantal position is deaffricated in Atepec, and both deaffricated and devoiced in Mitla Zapotec.

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|------|-------------------------------|---|-----------------------|-----------------------|
| (5a) | <i>*tyina</i> ‘to arrive’ | > | Atepec <i>tsina'</i> | Mitla <i>dzun</i> |
| (5b) | <i>*la?tyi?-tawo?</i> ‘heart’ | > | Atepec <i>lòs-tò'</i> | Mitla <i>las-to'o</i> |

Especially interesting, however, are the developments of **ty* and **tty* in compounds, which may be divided into two types. The first type, attested in Coatec (Southern) and Valley Zapotec, occurs when one of these phonemes functions as the initial segment of the second root of a nominal compound. The development there is identical to the one found after certain proclitics, which suggests that the two environments may be considered identical. The second type of development is the direct consequence of the stress-induced split of **ty* in Papabuco and Valley Zapotec. The two developments are taken up below in turn.

3. Development after proclitics and in second members of compounds

The position after certain proclitics tends to preserve an earlier value of the reconstructed phoneme; this type of development may be illustrated from Quiaviní (Central/Valley) Zapotec. As shown in (6a), the normal reflex of a pre-stress, non-pre-**i* **ty* in that variety is /ɾ/. However, in (6b) and (6c), i.e., after certain proclitics, the outcome is /d(j)/. This development is both different from the expected treatment of **ty*, and is regularly found only in a post-stress environment (shown in 6d). The treatment of **ty* in (6b) through (6d) is also more conservative than the regular treatment of pre-stress, non-pre-**i* **ty* in that it preserves more faithfully the presumed surface value of the reconstructed stop, including its palatal quality.

(6a)	<i>*^ltyaʔwo</i> ‘to get fat/big’	>	Quiaviní (<i>w</i>)- <i>ròo</i> ’ <i>o</i>
(6b)	<i>*^ltyaʔwo</i> ‘to get fat/big’	>	Quiaviní (<i>n</i>)- <i>djo</i> ’ <i>o</i>
(6c)	<i>*k^we-^ltyeʔ</i> ‘ant’	>	Quiaviní <i>b-di</i>
(6d)	<i>*^lke:ʔtyu</i> ‘hole’	>	Quiaviní <i>kèèe</i> ’ <i>dj</i>

An initial position in the second member of a compound may also have a preservative effect on the original phoneme, and may be conveniently illustrated from SB Loxicha (Southern) Zapotec (Beam 2005) and Chichicapan (Central/Valley) Zapotec (Smith Stark 2007). In SB Loxicha, **ty* and **tty* are both normally reflected as /t/ (cf. 7a, b), but surface as /tj/ after certain proclitics (7c, d) or as an initial segment in the second root of a compound (7e). The reflex in (7c) through (7e) is more conservative in that it preserves the palatality feature of the reconstructed stop, which is lost in the regular reflex.

(7a)	<i>*^lk-tyoppa</i> ‘two’	>	<i>tõp</i>
(7b)	<i>*tyi:ʔna</i> ‘work’	>	<i>ti’n</i>
(7c)	<i>*k^w-e:ʔttyiʔ</i> ‘louse’	>	<i>m-tjĩ</i> ’
(7d)	<i>*k^we-^ltyeʔ</i> ‘ant’	>	<i>m-tjê</i>
(7e)	(...)- <i>*^lk-tyoppa</i> ‘two’	>	<i>tiʔβ-tjõp</i> ‘twelve’

In Chichicapan Zapotec, *tty is reflected as /tʃ/ (cf. 8a). However, a linguistic questionnaire dating from 1887 shows that /tʃ/ comes from an earlier /tj/: this earlier reflex, spelled <ti>, is found in the questionnaire in the compound numeral ‘twelve’ (shown in 8b). The simple numeral ‘two’, however, is listed in the same questionnaire as *Chopá*: this indicates that at the time of writing, the earlier <ti> value of *tty may still have lingered in the onset of the second members of compounds while having already become an affricate in other positions (cf. Smith Stark 2007: 61).

- (8a) *k-tyoppa ‘two’ > *tʃopá, Chopá* (1887)
 (8b) (...)-*k-tyoppa ‘two’ > *Xicvi-tiopa* ‘twelve’ (1887)

To summarize: examples (6) through (8) show that the position as an initial segment of the second member of a compound or after certain proclitics may preserve an earlier value of *ty or *tty. The consonant in this position is in the onset of a stressed syllable, and its exceptional behavior does not seem to be affected by the nature of the preceding segment: for instance, SB Loxicha *mitjæ* and San Vicente Coatlán *mitjæ̂*, both from *kw-e:ʔtʃyiʔ ‘louse’,⁷ agree in having the conservative /tj/ reflex of *tty even though in the former variety the pretonic vowel has been lost. It is to be hoped that a more complete documentation of Southern and Valley Zapotec will soon come to light, which will enable further work on the historical phonology of these branches including the precise workings of this typologically interesting development.

⁷ Modified from *kw-e:ʔtʃyeʔ; cf. Operstein (2008) for argumentation.

4. Stress-related split of *ty

Table 1 shows that non-pre-*i *ty developed in most varieties into a tap, while preserving its obstruent character in some others, as follows.

- (9) *ty > r Northern: Atepec, Choapan, Rincón
 Southern: Miahuatec, Xanica, San Juan Mixtepec, Lapaguía,
 Amatlán, Coatecas Altas
 Central-Isthmus: Juchitán, Guevea, Quiavicuzas
 Central-Valley: Ayoquesco, Tilquiapan, Tejalapan, Quiegolani,
 (Córdova's)
- *ty > tʃ/dʒ Northern: Villa Alta
 Southern: Xanaguía, Quioquitani

Table 1 also reflects the fact that in Papabuco, Valley, and possibly Western Zapotec, *ty may have two outcomes depending on the position of lexical stress, as shown in (10).

- (10) *ty > alveopalatal obstruent / r Papabuco (Western Zapotec)
 non-pre-*i *ty > d(j) / r Valley Zapotec

Although similar in their conditioning environment, the developments in Papabuco (and Western) Zapotec, on the one hand, and Valley Zapotec, on the other, are not identical. For instance, in the first two groups the split affected all instances of *ty, whereas in Valley Zapotec it affected only non-pre-*i *ty. Also, whereas in Papabuco and Western Zapotec the post-stress outcome of *ty is an alveopalatal stop or affricate, in Valley Zapotec it is /dj/, which may be (secondarily) reduced to /d/. This suggests that the developments in the three subgroups are either unrelated (for example, by being chronologically separated) or areally diffused. However, regardless of the precise status of this development, it has provided Papabuco and Valley Zapotec with an interesting nominal allomorphy which has not been described to date.

The allomorphy involves nouns with a medial *ty which has become word-final as a result of post-tonic vowel loss. Such nouns may be attested in Papabuco and (to a considerably lesser extent) Valley Zapotec as two allomorphs differing in their reflexes of *ty, depending on whether this consonant is found in a free noun or in the first root of an old compound. (The compounds are in some cases old enough for the first member to have acquired a classifier-like function, following a tendency frequently found in Otomanguan languages.) Such allomorphs may be illustrated with the reflexes of *^llaʔtyiʔ ‘emotional center’ in Zaniza (Papabuco) Zapotec, where *ty comes out as both /dʒ/ and /r/.

- (11) Free form: *ladʒ* ‘heart, seed’
 First member of a compound: *lar-do* ‘spirit’ (literally, ‘heart’-‘holy’)

The differing treatment of *ty in the above forms may be explained by assuming, firstly, that the free noun was stressed on its initial syllable, and secondly, that when it functioned as the first root of a compound, it was unstressed. This means that *ty would have been found after stress in the free noun (cf. *^llaʔtyiʔ ‘emotional center’ > *ladʒ*) and before stress in the compound (*^llaʔtyiʔ-^ltawoʔ ‘heart’ > *lar-do* ‘spirit’), with the corresponding differences in treatment.

In the Papabuco branch, both Zaniza and Texmelucan Zapotec are rich in the allomorphy described above.⁸ A few additional forms are given in below in Tables 3 and 4; the corresponding Proto-Zapotec reconstructions are supplied wherever available.

⁸ The third known variety of Papabuco, Elotepec Zapotec, is sparsely documented, and the existing sources (Rendón 1971, Peñafiel 1886-93, and Belmar 1901) are not sufficiently detailed to demonstrate the existence of such allomorphs in that variety. Nouns of the relevant type consistently show either a rhotic or an obstruent reflex of *ty, cf. /ur-lo/ ‘eye’ (Rendón 1971, Peñafiel 1886-93), /ur-za/ ‘beans’ (Peñafiel 1886-93, Belmar 1901), /ur-yaga/ ‘acorn’ (this is my interpretation of Belmar’s *urioga*), /kwir/ ‘leg’ (Peñafiel

Table 2. Double treatment of *ty in Zaniza Zapotec

PZ	Free Form	Compound(s)	Literal Meaning of the Compound(s)
*laʔtyiʔ 'emotional center'	ladʒ 'heart'	lar-do' 'spirit'	'heart' - 'holy'
*ke:ʔtyu 'hole'	gédʒ 'hole, hollow'	ger-jeŋ 'throat' ger-kwit 'corner' ger-bá' 'grave' ger-dʒid 'armpit'	'hole-neck' 'hole-side' 'hole-grave' 'hole-?'
*ketye 'pine'	gedʒ 'pine'	ger-giŋ 'candle'	'pine-wax'
*latyeʔ 'cloth'	—	lar-du 'thread'	'cloth' - 'rope'
—	nedʒ 'cloth, clothing'	ŋir-lo 'blanket'	'cloth-face'
*k ^v -etya 'large domestic bird'	bedʒ 'turkey'	ber-bizuny 'chachalaca' ber-jag 'carpenter' ber-gí'b 'blacksmith' ⁹	'bird' - 'rattle' 'bird-wood' 'bird-iron'
*k ^v -etyiʔ 'frog'	bidʒ 'frog'	bir-béŋ 'toad'	'frog-guitar'
—	udʒ 'grain, seed'	ur-lo 'eye(ball)' ur-za' 'refried beans' ur-gi'b 'bullet'	'grain-face' 'grain-bean' 'grain-iron'

1886-93), /ler(e)/ 'heart' (spelled <Iere> in Rendón 1971, <lere> in Belmar 1901 and <ler> in Peñafiel 1886-93), and <lédxé> 'seed' (Rendón 1971).

Table 3. Double treatment of *ty in Texmelucan Zapotec

PZ	Free Form	Compound(s)	Literal Meaning of the Compound(s)
*laʔtyiʔ 'emotional center'	laʃ 'liver'	làr-dòò 'spirit'	'heart' - 'holy'
*ke:ʔtyu 'hole'	jeeʃ	jer-biiz 'post hole' jer-baa 'grave' jer-di 'fireplace' jer-mbe 'vagina' jer-jeʃ 'throat, pharynx'	'hole-forked pole' 'hole-tomb' 'hole-hearth' 'hole-female genitals' 'hole-neck'
*ketye 'pine'	jeʃ	jer-bedʒ 'splinter' jer-boo 'carbon' jer-jjʃ 'candle'	'pine' - 'sawdust' 'pine-hot coals' 'pine-wax'
*k ^v -etya 'large domestic bird'	beʃ 'turkey'	bir-jaa 'hen turkey' bir-jiib 'blacksmith' bir-jag 'carpenter' bir-ju 'mason' ⁹	'turkey-female' 'turkey-iron' 'turkey-wood' 'turkey-house'
*k ^v -etyiʔ 'frog'	bij 'frog'	bir-jag 'frog sp.' bir-jaʃ bir-beʃ 'guitar'	'frog-wood' 'frog-naked' 'frog-guitar'
*k ^v e:ʔtyiʔ 'seed'	mbij 'seed'	mbir-jiin 'chile set' mbir-pcuʃ 'tomato set'	'seed' - 'chili' 'seed' - 'tomato'
	uuʃ 'fruit'	ùr-lò 'eye' ur-too 'head' ur-jag 'acorn' ur-zaa ʃtiʌ 'pomegranate' ur-nguu 'testicle'	'fruit-eye' 'fruit-head' 'fruit-tree' 'fruit-bean (of) Castile' 'fruit-egg'

It is interesting to note that Zaniza and Texmelucan Zapotec differ as to the extent to which the allomorphs ending in /r/ are used. As may be seen in (12), some of the compounds that show up in Texmelucan with the pre-stress /r/-final allomorph are attested in Zaniza Zapotec with the post-stress reflex of *ty instead.

⁹ Speck (2004) derives *bir-* in the group of compounds denoting professional artisans from *mbeç* 'person, people'. However, it seems more likely that *bir-* is the bound allomorph of *beʃ* 'turkey': under this interpretation, the only original compound in the group would have been *bir-jag*, literally, 'bird-wood', with the original meaning 'woodpecker'. This word would have acquired the meaning 'carpenter' under the influence of Spanish, where *carpintero* means both 'woodpecker' and 'carpenter'. Then, since the *bir-* allomorph of 'turkey' was no longer perceived by the speakers as having to do with birds, it acquired a classifier-like meaning denoting professional artisans and was used to form further compounds, e.g., with 'iron' (for 'blacksmith', quite possibly under the influence of Spanish *herrero*, based on *hierro* 'iron'), and 'house' (for 'mason'). Incidentally, both Zaniza and Texmelucan Zapotec seem to have created new words for 'woodpecker' (cf. Zaniza Zapotec *ij-rit*, literally 'head-bone', and Texmelucan Zapotec *tʃit*).

(12) Compounds based on . . .

<i>udʒ</i> ‘seed, fruit’:	<i>udʒ-jag-gidʒ</i> ‘acorn’ (lit. ‘fruit’-‘oak’, where ‘oak’ is itself a compound) (cf. Texmelucan <i>ur-jag</i>) <i>udʒ-ŋgu</i> ‘testicle’ (lit. ‘fruit’-‘egg’) (cf. Texmelucan <i>ur-ŋgu’u</i>)
<i>gedʒ</i> ‘hole’:	<i>gedʒ-gita</i> ‘cave’ (lit. ‘hole’-‘stone’) <i>gedʒ-lo</i> ‘eye socket’ (lit. ‘hole’-‘eye’) <i>gedʒ-i’ŋ</i> ‘anus’ (lit. ‘hole’-‘buttocks’) ¹⁰
<i>bedʒ</i> ‘turkey’:	<i>bedʒ-da’w</i> ‘wild turkey’ (lit. ‘turkey’-‘mountain’) ¹⁰
<i>bidʒ</i> ‘frog’:	<i>bidʒ-ka</i> ‘green frog’ (lit. ‘frog’-‘green’) ¹⁰

While some of these compounds may be of a later date (i.e., formed after the stress-related development of *ty ceased to operate), in other cases the bound /r/-final allomorph seems to have been replaced with the free form, possibly due to its having become semantically opaque. This conclusion is prompted by the fact that some compounds in Zaniza Zapotec may have alternative forms; among these are *udʒ-lo* ~ *ur-lo* ‘eye(ball)’ and *udʒ-za*’ ~ *ur-za*’ ‘refried beans’.

The process of replacing the /r/-final allomorphs with the corresponding free allomorphs in Zaniza Zapotec may help explain the current situation in Valley Zapotec, where the above allomorphy is reported much more sparingly. Among the forms that can be obtained from published sources are Mitla Zapotec *b̥ed* ‘turkey’ and *ber-*, the first member of a compound referring to a local species of jay, and the parallel pairs in Quiavini Zapotec, *bu’udj* ~ *bar-* (= the first member of a compound meaning ‘wild

¹⁰ Cf. the corresponding Texmelucan compounds with *jer-* ‘hole’, *bir-* ‘turkey’, and *bir-* ‘frog’ in Table 3.

turkey’) and Güilá Zapotec, *bïidj* ~ *bàr-* (= the first member of a compound meaning ‘butterfly’).¹¹ The paucity of such allomorphs in Valley Zapotec by comparison with Papabuco is clearly in need of an explanation. Plausible explanations include the consideration that in Valley Zapotec, stress-related split has affected *ty only in non-pre-*i environments, which considerably reduces the number of the affected forms. It is also possible that the Valley varieties have generalized the free allomorph to all environments, thereby replacing the bound and opaque /r/-final allomorphs with the corresponding semantically transparent free forms.

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¹¹ The use of the word ‘turkey’ in compounds designating various kinds of birds is attested across Zapotec. For instance, the word for ‘chachalaca’ in Yaganiza (Northern) Zapotec is *bedʒχ-ʂigʻ* (cf. *bedʒχ* ‘turkey’).

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