

# More on the chronology of post-sixteenth-century sound changes in Zapotec and Spanish

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## 1. Introduction

T. Smith Stark's paper in this issue of *UniverSOS* raises a number of interesting questions related both to the chronology of post-sixteenth century sound changes in Spanish and Zapotec, and to the validity of our Proto-Zapotec reconstructions (cf. Benton 1988, Kaufman 1994). While it is not possible to address all of the relevant issues in this short contribution, in what follows I will try to draw readers' attention to some of the most salient points, focusing on the borrowing pattern of the product of velarization of sixteenth-century Spanish palatal fricatives /ʃ, ʒ/, the chronology of deaffrication of Medieval Spanish alveolar affricates /ts, dz/, and the surface phonetics of the reflexes of Proto-Zapotec \*tty and \*ty in sixteenth-century Chichicapan Zapotec, in that order.

## 2. Velarization of palatal fricatives in post-sixteenth-century Spanish

One of the important points made by T. Smith Stark in his article is the separation of Spanish loanwords in Chichicapan Zapotec into two layers based on the treatment of some diagnostic Spanish phonemes. Among these are the palatal sibilants /ʃ, ʒ/ (orthographically *x, j, g/\_e, i*), which were velarized in post-sixteenth-century Spanish to /x/, cf. 8(e).<sup>1</sup> Based on the development of the palatal sibilants, Spanish loanwords in Chichicapan are separated into two sets: in the earlier set of loanwords, both sibilants are rendered as <zh> [ʒ], and in the later set, they are rendered as <j> [x] (cf. 12, 13).

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<sup>1</sup> The numbers here and below refer to the numbered examples in T. Smith Stark's article.

Nevertheless, the existence of the loanword *gush+txísi* [guʃtʃisi], from Spanish *justicia* cited in 14(a) (and possibly others not cited in the article), appears to indicate that in this instance it is possible to recognize three, rather than two, layers of loanwords, with the earliest layer showing the adoption of the sibilants as /ʒ/, the middle layer showing the adoption of their velarized outcome as /g/, and the most recent layer showing the adoption of the velar fricative as /x/. The middle layer in this sequence apparently corresponds to the period immediately following the velarization of the palatal fricatives: the absence of an equivalent fricative phoneme in Chichicapan caused /x/ to be adopted as a (lenis) velar stop. The most recent layer corresponds to the period when /x/ has already become part of the phoneme inventory of Chichicapan, albeit occurring only on non-native items (cf. 5).

This two-stage pattern of adaptation of the outcomes of velarization of earlier /ʃ, ʒ/ is not unique to Chichicapan Zapotec, but is found in other Zapotec varieties as well. For example, *arveja* ‘pea’ was borrowed in Atepec Zapotec as *(daa)ribeʒi*, indicating an early date of adoption. The word *bermejo* ‘vermilion’ in the same variety has the shape *mécú* and *conejo* ‘rabbit’ has the shape *necu*, with the velar fricative rendered as a velar stop in both. When the word *conejo* was borrowed in that variety a second time, it was rendered as *cuneju*, with the velar fricative preserved intact. In Yatzachi El Bajo, *arveja* ‘pea’ is adopted as *lberg*, and in Quiaviñi Zapotec it has the shape *albe’erg*, showing that these varieties adopted this word later than Atepec Zapotec but earlier than, for example, Mitla Zapotec, where the same etymon has the shape *alberj* [alberx]. Other examples of /x/ borrowed as a velar stop include *(kos)ak* < *ajo* ‘garlic’ in Coatlán Zapotec (the

sixteenth-century shape of the word is preserved, e.g., in Zaniza Zapotec /ãʒ/), and *ãnk* in Texmelucan and *a'nngl* in Quiaviñi Zapotec, both from Spanish *angel*. In more recent loans, both Texmelucan and Quiaviñi Zapotec adopted Spanish /x/ as a velar or a glottal fricative, cf. Texmelucan *ãhy* from *Ángela* and Quiaviñi *Anjalye'nn* from *Angelina*.<sup>2</sup>

### 3. Deaffrication of Medieval Spanish <ç> and <z>

Chichicapan borrowings indicate that the affricates /ts, dz/, represented by the sixteenth-century graphemes <ç> and <z>, were already deaffricated in Spanish (cf. 8b). This seems to be generally the case with Spanish loanwords in Mesoamerica, which has led, e.g., Campbell (1991) and Sicoli (1999) to state that evidence of affricated pronunciation of <ç> and <z> in the Mesoamerican linguistic area is entirely absent. Nevertheless, the maintenance of the affricated pronunciation of <ç> and <z> well into the sixteenth century is well documented for the Peninsular Spanish, and the absence of such evidence in borrowings into Mesoamerican languages is in need of further investigation. In fact, Operstein (2003) documents the affricated pronunciation in the word *zapato* 'shoe' (spelled <çapato> in Córdoba 1578), which was borrowed in Zaniza Zapotec as *txubat*, and in the word *cruz* 'cross', which was borrowed in Atepec Zapotec as *curuuts*. As shown in that article, Zaniza *tx* [ʃ] and Atepec *ts* normally render Spanish *ch* [tʃ] (cf. *chivo* 'goat' > Zaniza *txib* and *cuchillo* 'knife' > Atepec *gutsilu*), which makes the treatment of <ç> and <z> in *zapato* and *cruz*, respectively, consistent with an affricated pronunciation of the phoneme(s) in question in the Spanish source-words. It is possible,

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<sup>2</sup> The sources of the data are referenced in Operstein (2001).

therefore, that future research will uncover more instances of affricated pronunciation of <ç> and <z> in Mesoamerica.

#### 4. *tx* and *dx* in sixteenth-century Chichicapan Zapotec

Present-day Chichicapan Zapotec has palatal affricates *tx* [tʃ] and *dx* [dʒ] (cf. 5) which derive historically, at least in part, from Proto-Zapotec phonemes reconstructed by Kaufman (1994) as \*tty and \*ty, respectively, cf.:

\*k-tyoppa > \*ttyoppa > Chichicapan *txopá* ‘two’  
\*p+ etya > Chichicapan *bwidxi* ‘turkey’<sup>3</sup>

Some Zapotec varieties preserve the occlusive value of the reflexes of \*tty and \*ty (cf. Texmelucan *cùp* ‘two’), which points to a relatively recent date of their affrication, in Chichicapan and elsewhere. This conclusion is corroborated by the treatment of /t, k/ in early Spanish loanwords in Chichicapan, where the Spanish stops are rendered by *tx* or *dx* before /i, e, j/ (documented in 15 through 20). This borrowing pattern suggests that at the time of contact with Spanish, Chichicapan *tx* and *dx* were still stops; and the fact that *tx*, *dx* render /t, k/ only before front vocoids points to their palatal /c:, c/ or palatalized /tʃ:, tʃ/ value. Their stop value in sixteenth-century Chichicapan also follows from their failure to render /tʃ/ in early Spanish loans, as shown by such borrowings as *chocolate* (15b), *mecha* ‘wick’ (23c), and *cuchara* ‘spoon’ (29e), among others.<sup>4</sup>

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<sup>3</sup> I am grateful to Thom Smith Stark for sharing with me his field data.

<sup>4</sup> Reflexes of \*tty and \*ty had a stop value in sixteenth-century Zaniza Zapotec as well (cf. Operstein 2005).

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