

THE PHONOLOGY OF FORTIS/LENIS IN ZAPOTEC
IN THE LIGHT OF LOANWORDS FROM SPANISH

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1. Zapotec is a family of five to ten (Kaufman n.d.) languages of the Otomanguean stock spoken mainly in the State of Oaxaca, Mexico. The phonemic systems of most Zapotec dialects described to date are based on an opposition between fortis and lenis consonants which runs through all or most of their obstruents and sonorants. Even the consonants which are neutral with respect to the fortis/lenis opposition (which is always the case with the glides and the fricatives /f/, /x ~ h/ borrowed from Spanish, and often with /r/, one or more affricates, and /m/, which is rare in Zapotec) are sometimes said to pattern with either the fortis or the lenis series (e.g. Munro and Lopez 1999:2; Regnier 1993:44; Nellis and Hollenbach 1980:92). The paired and unpaired fortis and lenis consonants of a selected number of Zapotec dialects are presented in Table 1.¹

TABLE 1
Fortis and Lenis Consonants in Selected Zapotec Dialects

	Yateé	Zoo	Ca	YB	Mitla	Gue	SLQZ	Isthmus	Quiég. Coatlán	Texm.	
/p/	f	f	f	f	f	f	f	f	f	f	
/b/	l	l	l	l	l	l	l	l	l	l	
/t/	f	f	f	f	f	f	f	f	f	f	
/d/	l	l	l	l	l	l	l	l	l	l	
/k/	f	f	f	f	f	f	f	f	f	f	
/g/	l	l	l	l	l	l	l	l	l	l	
/k ^w /	-	-	-	f	f	-	-	-	f	k	f
/g ^w /	-	-	-	l	l	-	-	-	l	l	l
/k ^j /	-	-	-	-	-	-	-	-	f	-	f
/g ^j /	-	-	-	-	-	-	-	-	l	-	l
/ts/	-	-	f	-	f	f	f	-	-	f	-
/dz/	-	-	l	-	l	l	-	-	-	-	-
/tʃ/	f	f	f	f	f	f	f	f	f	f	f

/dʒ/	1	1	1	1	1	1	-	1	1	1	1
/tʃ/	-	-	-	-	-	f	-	-	-	-	-
/dz/	-	-	-	-	-	-	-	-	-	-	-
/s/	f	f	f	f	f	f	f	f	f	f	f
/z/	1	1	1	1	1	1	1	1	1	1	1
/ʃ/	-	f	-	f	f	f	f	f	-	f	f
/ʒ/	-	1	-	1	1	1	1	1	-	1	1
/ʂ/	f	f	f	f	-	f	f	-	f	-	-
/z/	1	1	1	1	-	1	1	-	1	-	-
/f/	-	N/A	f/loan	loan	N/A	-	f	loan	loan	-	N/A
/x/	-	N/A	f/loan	loan	N/A	-	f	-	loan	-	N/A
/h/	-	-	-	-	-	-	-	N/A	-	-	-
/ɣ/	N/A	-	-	-	-	-	-	-	-	-	-
/m:/	loan	-	f	-	f	f	f	f	-	-	-
/m/	loan	N/A	-	N/A	1	1	1	-	1?	N/A	N/A
/n:/	f	f	f	f	f	f	f	f	-	-	f
/n/	1	1	1	1	1	1	1	1	1?	N/A	1
/ɲ:/	-	-	-	-	-	-	-	f	-	-	-
/ɲ/	-	-	-	-	-	-	-	1	-	-	-
/l:/	f	f	f	f	f	f	f	f	-	-	f
/l/	1	1	1	1	1	1	1	1	1?	N/A	1
/r:/	-	-	f	-	f	-	f?/loan	loan	-	-	-
/r/	loan	N/A	1	N/A	1	1	1?	1	r?	loan	N/A
/j/	N/A	N/A	1	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A
/w/	N/A	N/A	1	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A

‘f’ and ‘l’ are fortis and lenis, respectively, ‘N/A’ means that the phoneme is not said to participate in the fortis/lenis dichotomy, ‘-’ that the phoneme is not attested in this dialect, ‘loan’ that the phoneme is attested only in Spanish loanwords and has not been considered in the light of the fortis/lenis division. ‘Zoo’ is Zoogocho, ‘Ca’ is Cajonos, ‘YB’ is Yatzachi El Bajo, ‘SLQZ’ is San Lucas Quiaviní Zapotec, ‘Gue’ is Guelavía, ‘Quieg.’ is Quiegolani, ‘Texm.’ is San Lorenzo Texmelucan. For Isthmus Zapotec, I follow the phonemic analysis suggested in Marlett and Pickett (1987); in the inventory given in Pickett et al. (1998:121), /m/ is considered a lenis sonorant, there is a fortis/lenis pair *r/rr*, and /ɲ/ and /ɲ:/ are not cited as part of the phonemic system. Quiquitan Zapotec, in addition to the obstruents in this table, is also said to have the palatalized fortis/lenis pairs *tʰ/dʰ*, *ç/zʰ*, and *sʰ/zʰ*.

Descriptively, the distinction between the two series of consonants is expressed differently in the sonorants than in the different groups of obstruents, and depends on the syllable position of the consonant. Correlates of fortis/lenis in different dialects spoken widely apart are of a recurring kind, and can be summarized in the form of a table: Table 2 shows at a glance differences in the behavior of fortis and lenis consonants in different positions. Thus, fortis stops and affricates are always voiceless, aspirated word-finally, and are never lenited; their lenis counterparts show subphonemic variation in voicing, no

aspiration, and a tendency towards fricativization. Fortis affricates and fricatives are also said to have greater friction than their lenis counterparts. All fortis obstruents are said to be articulated more tensely than the lenis ones, and are lengthened after a stressed vowel. In sonorant consonants, the main distinguishing feature is the length: fortis sonorants are longer than the lenis ones. Fortis lateral is always voiced, while the lenis lateral can be devoiced and accompanied by friction. Both alveolar nasals are voiced, but only the lenis one assimilates to the point of articulation of the following consonant. Word-finally, the lenis alveolar nasal can be realized as velar or as the nasalization of the preceding vowel. The fortis alveolar vibrant is a trill, and the lenis one is a tap. Until Avelino (2001), all lenis consonants were claimed to lengthen the preceding vowel; Avelino has shown that, at least in the dialect he investigated, the lengthening effect is confined to the obstruents.

TABLE 2

Correlates of Fortis/Lenis in Modern Zapotec Dialects

	Word-initially	Intervocally after stressed V	Word-finally
f stops/affricates	- voice + closure - aspiration - lengthening	- voice + closure - aspiration + lengthening	- voice + closure + aspiration - lengthening
l stops/affricates	+/- voice +/- closure - aspiration - length	+/- voice +/- closure - aspiration - length lengthens preceding stressed V	+/- voice +/- closure - aspiration - length
f fricatives	- voice - lengthening	- voice + lengthening	- voice - lengthening
l fricatives	+/- voice - length	+/- voice - length lengthens preceding stressed V	+/- voice - length
f sonorants	+ length	+ length	+ length

The correlates of fortis and lenis summarized above and in Table 2 received first experimental confirmation in Jaeger's (1983) study of the acoustic properties of Yateé Zapotec consonants. This study suggests that the most important feature of the fortis/lenis contrast is likely to be acoustic duration (Jaeger 1983:187-88). A phonetic study of the fortis/lenis contrast in Yalálag Zapotec by Avelino (2001) confirms and further elaborates this conclusion; in addition, Avelino discards intensity and articulatory strength as responsible for the fortis/lenis contrast, a suggestion repeatedly made in the literature on various Zapotec dialects (2001:84-87).

Swadesh (1947) related the fortis/lenis dichotomy in modern Zapotec to a single/geminate distinction at the Proto-Zapotec level. In Swadesh's view, supported and further developed in Suárez (1973), Kaufman (1983, 1994), and Benton (1988), lenis obstruents and the sonorants /l/ and /n/ go back to single consonants in Proto-Zapotec, while their fortis counterparts originated in geminate consonants, some of which could have sprung from consonant clusters. As regards the present-day fortis/lenis pairs m:/m and r:/r, as well as the Isthmus Zapotec pair l:/l, only the lenis members of each pair go back to Proto-Zapotec sources, while their fortis counterparts represent later developments from other sources. Late creation of fortis counterparts to these sonorants is likely to be the result of paradigmatic pressure from other fortis/lenis pairs in the system. The immediate source of the newly developed fortis sonorants seems to have been compensatory lengthening, cf. the correlation between Isthmus Zapotec fortis /l:/ and the length of the following vowel noted by Benton (1988:17), and that between fortis /m:/ in SLQZ loanwords and the consonant clusters in their Spanish originals (e.g.

zh:ommreel < sombrero ‘hat’, cha’mm < *chamba* ‘work’, tye’eemm < *tiempo* ‘time’, and xtro’oomm < *trompo* ‘top (toy)’).

The tendency to restore the system to symmetry is especially apparent in those dialects in which the relationship between the fortis and the lenis members of the opposition has ceased to be that of length. The gap between the fortis and lenis sonorants is relatively small in Zaniza, Texmelucan, and Quioquitani Zapotec where, as the result of palatalization of Proto-Zapotec *nn and *ll, /ɲ/ and /ʎ/ now function as the fortis counterparts of /n/ and /l/, respectively. In Isthmus Zapotec, where the historical result of Proto-Zapotec *ll is /nd/, the etymological fortis/lenis pair *nd/l* is no longer perceived as such, which has probably contributed to the development of the non-etymological fortis /l:/ mentioned above (Benton 1988:17). The tendency to restore the symmetry of the fortis/lenis opposition is also apparent in the treatment of the reflexes of Proto-Zapotec *ty (Suárez 1973, Kaufman 1983:111, Benton 1988:7-11). In those dialects or environments where the outcome of *ty is a lenis stop or affricate, it is symmetrically matched by the corresponding fortis stop or affricate resulting from its geminate counterpart *tty. In the dialects or environments in which this proto-phoneme resulted in a rhotic, it is no longer synchronically connectable to its etymological geminate counterpart, which has triggered the development of a fortis alveolar rhotic to fill the systemic gap (in Table 1, such dialects are Mitla, Cajonos, and possibly SLQ Zapotec).

Various kinds of evidence indicate that in the sixteenth century the phonemic system of Zapotec already operated on the basis of a fortis/lenis dichotomy. The most important early source of evidence is observations of Juan de Córdova, the first missionary grammarian of Zapotec, on the pronunciation of Zapotec consonants and the

rendering of Spanish words by the Zapotecs. Another, less direct but no less informative source is the orthography employed by Córdoba in his dictionary of the same dialect (cf. Manrique 1966-67; Smith 2000), as well as the orthography of other writings dating from the same period (Broadwell 2000). Yet another source of information on the phonemic system of sixteenth-century Zapotec is Zapotec renderings of numerous Spanish loanwords that entered its various dialects during the course of that century.

2. The phonemic system of sixteenth-century American Spanish has been studied in great detail (for an extensive bibliography on the subject see, e.g., Parodi 1995). For the phonemic system of contemporary Zapotec the only source currently available is an in-depth study by Smith (2000) of the phonology of the Valley dialect described by Juan de Córdoba, based mainly on the orthography employed by Córdoba in his dictionary of this dialect (Córdoba 1578b). The two phonemic systems are collated below (based on Parodi 1995:40 and Smith Stark 2000:54).

<u>16th-c. Spanish²</u>				<u>16th-c. Valley Zapotec</u>						
p	t		tʃ	k	p	t	t̥	tʃ	k	k ^w
b	d			g	b	d	d̥	dʒ	g	
β	z	ẓ	ʒ			z		ʒ		
f	s	ʃ	ʃ	h		s		ʃ	h	
m	n		ɲ			n		ɲ		
	r:				mm	nn		ɲɲ	r	
				λ						
	l		ʎ			ll				
w			j		w			j		

Some of the most salient differences between the above systems include the fact that Spanish stops and fricatives constitute voiceless/voiced pairs while the corresponding Zapotec obstruents are divided into fortis and lenis, and the fact that Spanish has three series of sibilants and Zapotec only two. In addition, Zapotec has fortis and lenis versions of each sonorant except the /r/ which, at least according to this interpretation of Córdova's Zapotec, was absent from the system altogether: instead of what appears in modern dialects as /r/ Córdova often writes a <t>, which is interpreted by Smith Stark as an alveolar stop, or the lenis member of the pair spelled above as t/d (cf. discussion of its possible surface phonetics in Smith 2000: 43-45).³ Finally, Spanish has a labiodental fricative which is alien to most Zapotec dialects.

3. The remainder of this paper examines the treatment of Spanish consonants in the earliest layer of Spanish borrowings in Zapotec. The earliest layer of loanwords is readily distinguishable from the more recent borrowings primarily by the treatment of Spanish sibilants and the /ʎ/. For this study, a large number of early Spanish loanwordss in various dialects of Zapotec has been assembled (the dialects examined and the borrowed vocabulary are listed in the Appendix). Where there is sufficient data, a distinction is made between the three consonantal positions important from the viewpoint of Zapotec phonology: word-initial, intervocalic, and word-final. Zapotec data are quoted in the orthography of the original publications.

Stops and /f/

1(a) Spanish p-, b- (spelt , <v>)⁴ > Zapotec b-:

pañó ‘cloth, sash, kerchief’ > Z bay(-ij), T bay, Zoo bay, Ca béy, A payu, YB bey,
Co pai, I bayu’

papaya > MZ baii, YB pey (in other dialects borrowed late)

Pedro (name) > Z bed, Ca bɛɫd

peso (a coin) > Z bèzh, T peʒ&, MZ beex, AZ beψ)u, I beʒ&u

barato ‘cheap’ > Z bràd (in other dialects borrowed late)

vaca ‘cow’ > Z bàg, MZ baag, SLQZ baag

vigilia ‘vigil’ > Z bixily.

Occasionally, the developments b- > m- or m- > b- are also attested:

batea ‘tray’ > Z (yag-)mtey

botón ‘button’ > Z mu(n)tuny

muñeca ‘doll’ > I buñega’.

1(b) Spanish -p-, -b- (spelt , <v>) > Zapotec -b-:

Felipe (name) > Z lib, SLQZ Li’eb

zapato ‘shoe’ > Z txubat

compadre ‘godfather’ > SLQZ mbaaly, MZ mbaal, I mbale, A umpálí

caballo ‘horse’ > Z kwey, T kQáy, MZ cabaii, Zoo cabayw, YB cabey, Co wai,

Q g^way, SLQZ caba’i

chivo ‘goat’ > Z txib, YB/Zoo σ&ib, SLQZ zhi’eb

navaja ‘folding knife’ > Z nibàzh, SLQZ nabaazh, MZ nabaax

novillo ‘young bull’ > Z nibily, SLQZ (gùu’ann) nabii.

1(c) Spanish f > Zapotec p/b (if the names below were indeed borrowed early; cf. a different treatment of /f/ in the late loan *Fransye'scw* < *Francisco* in the same dialect):

Florentino > SLQZ Ploory

Alfonsa > SLQZ Po'onzy

Felix > SLQZ Pu'isy

Epifania > SLQZ Ba'nny.

2(a) Spanish t-, d- > Zapotec t-, d-:

taza 'cup' > Z tàz, T taz, A taza

teja 'roofing tile' > I (yoo) deč&a (yoo 'house'), SLQZ deezh

tijeras 'scissors' > Z tixer, MZ tixer, A tiyera, Q čer (< tšer, cf. tmaž < Tomás)

timón 'beam' > Z (yag-)tim, SLQZ dye'mm

tomín (a coin) > A tummi

testigo > Z testiw, YB testigw, SLQZ testi'u

dinero 'money' > T tíny

domingo 'Sunday' > Z timiw, MZ duminngw, Zoo/YB dmigw, SLQZ

Domye'eenngw

durazno 'peach' > YB tlas, A trasu, M duras, SLQZ dura'azn.

2(b) Spanish -t-, -d- > Zapotec -t-, -d-:

aceite 'oil' > Z ased

Antonio (name) > Z Duny, SLQZ Nduuny (cf. also later To'nny)

barato 'cheap' > Z bràd

limeta ‘bottle’ > Z almet, Zoo lmet, YB lmet, Q lmet

capitán ‘captain’ > Z kaptá

chocolate > Zoo š(i)cwlat, YB σ&cwlat, A chocolati, Z txulad, MZ chiculajd,

I dxuladi

morado > Z m(b)ràd (YB morad, Zoo moradw, A moradu are late)

testigo > Z testiw, YB testigw, SLQZ testi’u.

2(c) The treatment of dj and d / __ i presents a special case: if borrowed early enough, they fall together with the reflexes of Proto-Zapotec *ty, cf.:

Dios ‘God’ > Z dyuzh, T nygyoož, SLQZ Dyooz (Zoo Dios and similar forms are late borrowings)

medio (a coin) > Zoo mechw, YB mech, Ca m:ěj

media ‘sock’ > T megy

remedio > YB rmech, SLQZ (Nnambied Dela)rmuudy

sandía > Z xindyi.

In at least one case, Spanish /r/ has a similar treatment:

naranja ‘orange’ > nchaxhu (Diccionario 1995:33).

Cf. the above treatments with the reflexes of Proto-Zapotec *ty in the same languages:

*ke:ʔtyu ‘hole’ (Kaufman 1994:21) > Z gedy, SLQZ guèè’dy, Zoo yechw,

YB yech

*laʔtyiʔ (tawoʔ) ‘heart’ (Kaufman 1994:20) > Z lady, T (rat) lagy(ã)

*tyoʔwa ‘mouth’ (Kaufman 1994:43) > Z rúʔ, T rùʔ, YB cho’a, SLQZ ru’uh,

A rú'a.

3(a) Spanish /k/- (spelt <c>, <qu>)> Zapotec k- or g-:

canoa 'trough' > Z kanu

capitán 'captain' > Z kaptá

queso 'cheese' > Z kèzh, T kyež

cochi 'pig' > Z kutx, YB/Zoo coσ&, Co kuučč, A cuttsi, SLQZ cu'uch, MZ cuch

coles 'cabbages' > YB corix, A culiŷi, Q k^wliž, SLQZ curehehizh, MZ curijxh⁵

cruz 'cross' > Z kruz, T kruuz, Zoo cruz, YB coroz, A curuuts, MZ crujz

cuchillo 'knife' > MZ guchiil, Zoo cwšiyw, YB cwšiy, A gutsilu.

3(b) Spanish g-, -/k/-, -g- > Zapotec g-, -g-:

garbanzo 'chickpea' > Z garbaz, SLQZ garba'aannz

garrote 'stick, staff' > SLQZ garrood, A yarróte (g- > y- is regular)

vaca 'cow' > Z bàg,⁶ MZ baag, SLQZ baag

azúcar 'sugar' > Z asug

amigo 'friend' > Z (a)miw, Zoo/YB migw, SLQZ amiiegw.

There is at least one attested case of g- > /k/-, which may have to do with the g- being part of a cluster:

granada 'pomegranate' > Z karnad, SLQZ ca'rnaad.

3(c) Word-finally, some dialects drop velar stops before rounded vowels:

amigo 'friend' > Z (a)miw (but Zoo/YB migw, SLQZ amiiegw)

trigo ‘wheat’ > Z triw, MZ triuu, SLQZ tri’u (but Zoo trigw)

yegua ‘mare’ > Z yew, MZ yeuu (but YB yegw)

nigua ‘maggot’ > Z níw, T niw, Co niu, Q niw, SLQZ niuw (but MZ nigw)

banco ‘bank’, ‘bench’ > Z bāw (but SLQZ ba’aanngw, I bangu’)

testigo > Z testiw, SLQZ testi’u (but YB testigw)

domingo > Z timiw (but MZ duminngw, YB/Zoo dmigw, A domingu, SLQZ

Domye’eenngw).

(In a later layer of loans in the same dialects, the velars are preserved in this position, cf. surco ‘furrow’ > Z xurk, T šurk, MZ xurc, SLQZ zhu’arc.)

To summarize: (1) voiceless and voiced labial stops are borrowed as lenis, both word-initially and intervocalically. One has to bear in mind, however, that word-initial fortis /p/ is extremely rare in Zapotec (in some dialects it is not attested at all, cf. Avelino 2001:6; Nellis and Hollenbach 1980:93), so the lenis outcome is expected in that position; (2) Spanish alveolar stops are borrowed as either fortis or lenis both intervocalically and word-initially, while /d/ before /i/ is always treated as lenis; (3) Spanish initial /k/- can be borrowed as fortis or lenis, while intervocalic -/k/-, along with initial and intervocalic /g/, tends to be borrowed as lenis. Thus, only labial Spanish stops are always borrowed into Zapotec as lenis. The alveolar and velar stops show a great deal of vacillation in this respect, but at any rate the pattern of their borrowing does not correlate with their voicing in Spanish. While the alveolar stops are borrowed as fortis or lenis in approximately equal proportion, most initial /k/’s are borrowed as fortis and most intervocalic /k/’s as lenis. This perhaps has to do with the frequency of distribution of the fortis and lenis phonemes in native Zapotec words, or with different correlates of the

fortis/lenis distinction in the three series of early Zapotec stops. Thus, a careful study of the treatment of stops in early Spanish loans in Zapotec only partially confirms Kaufman's (n.d.:18) observation that they, along with other obstruents, were borrowed as lenis.

The affricate

In most dialects Spanish /tʃ/ was borrowed as fortis, both word-initially and intervocalically:

chocolate > Z txulad, Zoo š(i)cwlat, YB šcwlat, Ca cíkwlát, MZ chiculajd

(but I dxuladi)

chivo 'goat' > Z txib, T čiiB, Zoo/YB šib, Ca cîb (but SLQZ zhi'eb)

coche 'pig' > Z kutx, MZ cuch, Zoo/YB coš, Co kuučč, A cuttsi, SLQZ cu'uch

cuchara 'spoon' > Zoo cwšar, YB c(w/o)šar (but SLQZ wzhyaar, I (g)udxara)

cuchillo 'knife' > MZ guchiil, Zoo cwšiyw, YB cwšiy, Z gutsilu, SLQZ bchiilly

(but I (g)udxíu)

macho 'mule' > Z matx, T mač, Zoo mašw, YB maš (but MZ madz)

machete > Zoo mašet, YB mšet, Co maččætt (but MZ madxed, SLQZ

mazhye'edy, Q mzæd)

mecha 'wick' > T meč, Ca m:éc.⁷

Reflexes of this affricate in early loanwords coincide with those of Proto-Zapotec geminate *čč in native morphemes, cf.:

*ccho-n(n)a ‘three’ (Benton 1988 #122) > Z txun, T čon, Zoo šone, YB šonə, A tsunná, Ca cón:é, MZ chon

*kiccha ‘hair’ (Benton 1988 #55)/*kittza(7) (Kaufman 1994:20) > Z gitx, T gyìč, Zoo yışa’, YB yışə’, A íttsa’ (íqquia), SLQZ gyihch, Co kičč.

Sibilants

1(a) Spanish /s/ (spelt <c>, <ç>) and /z/ (spelt <z>)⁸ > Zapotec /z/ and /s/:

arroz ‘rice’ > Z arùz, YB roz (Zoo ros, SLQZ rro’s are late)

azúcar ‘sugar’ > Z asug (MZ su’cr, Zoo/YB suc, SLQZ sua’rc may be late)

ciudad ‘city’ > Z siwda, Zoo ciuda, YB syoda, SLWZ syudaa

cocinero ‘cook’ > Z kusnely

cruz ‘cross’ > Z cruz, Zoo cruz, YB coroz, MZ crujz (SLQZ cru’uhsy may be late)

durazno ‘peach’ > YB tlas, A trasu, SLQZ dura’azn, MZ duras (all may be late)

garbanzo ‘chickpea’ > Z garbaz, SLQZ garba’aannz, MZ garbans (late)

mazo ‘mallet’ > Z mez, T mǎz, Zoo/YB maz, SLQZ maaz, MZ mas (late)

mostaza ‘mustard’ > MZ (yag) muxtas (yag ‘tree’)

mozo ‘servant’ > Z mùz (MZ/Zoo/YB mos is late).

It is likely that part or all of the loanwords in which Spanish /s/ of /z/ > Zapotec /s/ were borrowed later than those in which Spanish /s/ or /z/ > Zapotec /z/.

1(b) The treatment of <z> in two loanwords can be taken as an indication of its affricated pronunciation in Spanish. Spanish *zapato* ‘shoe’ was borrowed in Zaniza Zapotec as *txubat*, and Spanish *cruz* ‘cross’ was borrowed in Atepec Zapotec as *curuuts*. Zaniza tx

and Atepec *ts* normally render Spanish *ch* (cf. chivo ‘goat’ > Z txib and cuchillo ‘knife’ > A gutsilu). The treatment of <z> in these loans is therefore consistent with its affricated pronunciation (/ts/) in Spanish, and may be taken as evidence for a late survival of this affricate.

2. Spanish /ʃ/ (spelt <ss>, <s>) and / | / (spelt <s>) > Zapotec /ʃ/ or /ʒ/:

sacristán > Z xundista, A ñueda(yoto’) [yoto’ ‘temple, church’], SLQZ

sacax:taany

san, santo ‘saint’ > I (beu) žandu’; ža(bizende) ‘San Vicente’, SLQZ Xann(daan)

‘Santa Ana’; Xmo’oony ‘Santa Mónica’

semana > Z ximan, YB šman, Zoo xman, A ŷumanu, Ca žm:ân, SLQZ/MZ

xmaan

silla ‘chair’, ‘saddle’ > Z xily, T šily, MZ (yag)xhil, SLQZ zhi’iilly, A xila’

sombrero > MZ xhumbreel, SLQZ zh:ommreel

escuela > Z xikwal

camisa > Z mîzh, MZ (re-)gamizh, A miŷa, I gamiža

manso > Z màzh, T maž, YB max, MZ madx

misa ‘mass’ > Z mîzh, T mîž, I mîža’, MZ mix, A miŷa (YB/Zoo mis, SLQZ

mye’es are late)

peso > Z bezh, T pež, MZ beex, A beŷu, I bežu

Dios > Z dyuzh, T nygyoož, A (Tata) Diuŷ(a), I dyuži, Q dyuž (< adiós)

Tomás > Z màzh, SLQZ Ma’azhy, Q tmaž

Luis > Z wizh, T wiíž.

In the dialects that currently distinguish (and probably did so in the sixteenth century) between alveopalatal and retroflex sibilants, Spanish /ʃ/ and /z/ were borrowed, with very few exceptions, as alveopalatal.

3. Spanish /ʃ/ (spelt <x>) and /z/ (spelt <j> and <g>) > Zapotec /ʃ/ or /z/:

jabón ‘soap’ > I žabú

jarro ‘pitcher’ > A ýaru(iyya) [iyya ‘flower’]

jeringa ‘syringe’ > I žiringa

jícara ‘calabash cup’ > Z xìg, I žiga, SLQZ zh:i’ahg, MZ xijg, YB xiguə’

Juana (name) > Ca žwán, SLQZ Zh:ùaan

gigante > Z xigan

aguja ‘needle’ > A gúψ)á, MZ guux, SLQZ (guìi’ch)gwu’ùà’zh:

ajo ‘garlic’ > Z àzh, T až, Zoo/YB (cuan)ax, A gaỹu, SLQZ (xti)aazh, MZ aax

arveja ‘pea’ > A (daa)ribeyĩ (daa ‘beans’)

clavija ‘peg’ > Z (yag-)kabizh (yag ‘wood’), SLQZ garbiizh

mixe ‘Mixe’ > MZ miix, YB/Zoo mix, SLQZ Miìi’zh

naranja > T láž, A maraỹa, SLQZ nraazh, MZ naraax

navaja > Z nibazh, SLQZ nabaazh, MZ nabaax

tijeras ‘scissors’ > Z tixer, MZ tixer, Q čer (< tšer), A tiỹera, SLQZ (gyè’b)

zhiier.

In dialects that currently distinguish between alveopalatal and retroflex sibilants, /ʃ/ and /ʒ/ were borrowed as alveopalatal.

To summarize: (1) the affricate *ch* is mostly borrowed as fortis; (2) /s/ (and /z/) are mostly borrowed as lenis, but in *Zaniza zapato* and *Atepec cruz* they are rendered like Spanish *ch* and may reflect an affricated pronunciation of Spanish <z>; (3) Spanish /ʃ/, /z/, /ʎ/ and /ʒ/ are borrowed as fortis or lenis alveopalatal fricatives (/ʃ/ and /ʒ/) word-initially, and, with one exception, as lenis (/ʒ/) intervocalically. Thus, the pattern of rendering obstruents in Spanish loans that emerges is a complex one. As can be seen from Table 3, the voicing of Spanish obstruents does not affect the borrowing pattern, which instead seems to depend on other factors.

TABLE 3
Rendering of Spanish Obstruents in Early Zapotec

	Word-initially	Word-medially	Word-finally
p, b (, <v>)	l	l	not attested
t, d	f/l	f/l	not attested
d+i	l	l	not attested
/k/	f/l	l	not attested
g	l	l	not attested
ch	f	f	not attested
/s/, /z/	l	l	l
/ʃ/, /z/, /ʎ/, /ʒ/	f/l	l	l

4. The phonology of Córdoba's Zapotec based on a study of his orthography (Smith Stark 2000) can be of some assistance in elucidating the above borrowing pattern. The following traits of Córdoba's orthography appear to be relevant: (1) there seem to be no examples of word-initial fortis /p/; (2) only the letters used for rendering voiceless obstruents in Spanish are used in rendering fortis obstruents in Zapotec; (3) the letters

used for voiced obstruents in Spanish can be used in rendering Zapotec lenis segments /b/, /g/, /z/, and /Z/; (4) both fortis and lenis dental stops are represented by the letter <t>; (5) fortis obstruents in Córdoba's Zapotec were apparently lengthened in posttonic syllables since the infrequent examples of double spelling of consonants are confined to this position; (6) Zapotec /s/ and /z/ are reasonably well differentiated graphically, but /ʃ/ and /z/ are not (Smith 2000:32-33, 35-46). Additional information on the fortis/lenis phonology of Córdoba's Zapotec may be found in his remarks in the *Arte*. Here, Córdoba enumerates such mistakes made, he says, mostly by Spaniards in their Zapotec, as pronouncing intervocalic /b/ for /p/, /g/ for /k/ and vice versa, /z/ for /s/, initial /d/ for Spanish /t/ ('Doledo' for 'Toledo'), and <x> (alveopalatal sibilant) for <s> (retroflex sibilant) (1578a:73). While it is likely that some of these observations reflect more on Córdoba's Spanish than on his Zapotec, they seem to explain (1) the absence of the initial fortis /p/ in rendering Spanish loans (explainable by the absence of initial /p/ in native words), (2) the little role played by the voicing of Spanish obstruents in the overall borrowing pattern and especially in that of the dental stops, and (3) the absence of renderings of intervocalic Spanish /p/ and /k/ as fortis (explainable by the lengthening of the native fortis obstruents in this position). In addition, Córdoba's observations on the pronunciation mistakes that involve voiced and voiceless alveolar sibilants and only the voiceless alveopalatal sibilant probably point to the voicelessness of /z/ in his Spanish, which in turn explains the under-differentiation of /ʃ/ and /z/ in his Zapotec orthography.

5. Nasals

1(a) Spanish m > m in Zapotec:

macho ‘mule’ > Z matx, T mač, MZ madz, Zoo mašw, YB maš
 mazo ‘mallet’ > Z mez, Tmãz, Zoo/YB maz, SLQZ maaz, MZ mas
 mula ‘female mule’ > Z/T muly, MZ mul, SLQZ muuall
 almohada ‘pillow’ > Z almàd, YB lmad, SLQZ almwaad
 amigo ‘friend’ > Z (a)miw, YB/Zoo migw, SLQZ amiiegw
 limeta ‘bottle’ > Z almet, Zoo lmet, YB lmet
 compadre ‘godfather’ > A umpali, SLQZ mbaaly, MZ mbaal, I mbale
 comadre ‘godmother’ > I male, Ca m:ál
 domingo > Z timiw, MZ duminngw, Zoo/YB dmigw, Z domingu, SLQZ
 Domye’eenngw
 semana ‘week’ > Z ximan, YB σ&man, Zoo xman, A ñumanu, SLQZ/MZ xmaan.

1(b) Cases where Spanish /m/ was borrowed as fortis have to do with the loss of a following consonant and subsequent compensatory lengthening of the nasal:

sombrero ‘hat’ > SLQZ zh:ommreel
 timón ‘beam’ > SLQZ dye’mmm
 tiempo ‘time’ > SLQZ tye’eemm
 trompo ‘top’ (toy) > SLQZ xtro’oomm
 tomín (coin) > A tummi.

1(c) Some /m/’s in Zapotec loans resulted from other consonants:

batea ‘tray’ > Z (yag-)mtey
 botón ‘button’ > Z mu(n)tuny

naranja ‘orange’ > A maraŷa, Ca m:râž, mbrhaxh (Diccionario 1995:33).

2(a) Spanish n- > lenis n- in Zapotec:

naranja ‘orange’ > SLQZ nraazh, MZ naraax

navaja ‘folding knife’ > Z nibazh, SLQZ nabaazh, MZ nabaax

nigua ‘maggot’ > Z niw, Co niu, SLQZ niuw, MZ nigw, Q niw

novillo ‘young bull’ > Z nibily, SLQZ (gùu’ann) nabii.

2(b) Spanish -n- > fortis or lenis -n- in Zapotec:

dinero ‘money’ > T tíny

mina ‘mine’ > T miny

panela ‘sugar loaf’ > Z pinyal

semana ‘week’ > Z ximan, YB šman, Zoo xman, A ŷumanu, SLQZ/MZ xmaan.

Spanish -n- tends to be lost before fricatives, but is preserved before stops:

garbanzo ‘chickpea’ > Z garbaz, SLQZ garba’aannz

manso ‘tame’ > Z màzh, T maž, YB max, MZ madx

naranja ‘orange’ > A maraŷa, Ca m:râž, T láž, SLQZ nraazh, MZ naraax

sandía ‘watermelon’ > Z xindyi, SLQZ xanndiia, I žandie’

culantro ‘cilantro’ > Z kulyandr, A culandru, SLQZ cura’aann

banco ‘bank’, ‘bench’ > SLQZ ba’aanngw, Z bāw, Zoo/YB bancw, I bangu’

domingo ‘Sunday’ > MZ duminngw, SLQZ Domye’eenngw, A domingu.

2(c) Word-final Spanish -n can be rendered by a fortis or lenis nasal, or be lost, depending on the dialect:

sacristán > Z xundista, A ñueda(yoto'), SLQZ sacax:taany

timón 'beam' > Z (yag-)tim, SLQZ dye'mm (-mm < *-mn; note also the stress shift)

tomín (a coin) > A tummi

botón 'button' > Z mu(n)tuny, SLQZ btoony.

3(a) Spanish ñ > lenis n in Zapotec:

albañil 'mason' > Z arbanyil, YB/Zoo albanil

escaño 'bench with a back' > YB/Zoo xcan, MZ xcaan.

3(b) There is also one example of an early loan in which Spanish ñ > Zapotec y:

pañó 'cloth' > Z bay(-ij), T bay, I bayu', Co pai, A payu, YB bey, Zoo bay.

The uniform outcome of ñ as a glide, despite the fact that Córdoba's and doubtless other dialects had or could have had a palatal nasal matching the Spanish ñ seems to argue for a borrowing through the medium of Nahuatl, where y is one of the possible outcomes of early Spanish ñ, and *pañó* is reflected as *payo* (cf. González Casanova 1977:131, 146).

Liquids

1(a) Spanish l- > fortis or lenis l- in Zapotec:

lazo > T laz

limeta 'bottle' > Z almet, Zoo lmet, YB lmet, Q lmet

lunes 'Monday' > Z lunex, MZ lun, Zoo lun, YB (zha) lon, A luni, SLQZ Luuny

Lucas (name) > Z lyuj, T luk, SLQZ Lu'c.

1(b) Spanish -l- > fortis or lenis -l- in Zapotec:

alguacilillo (dim. of alguacil 'constable') > SLQZ lasliery

culantro 'cilantro' > Z kulyandr (YB culantr, A culandru)

chocolate > Z txulad, Zoo š (i)cwlat, YB σ&cwlat, MZ chiculajd

escuela 'school' > Z xikwal

mezcal 'agave liquor' > Z mixcaly (Zoo mezcal, YB mescal, SLQZ mescaaly)

mole 'stew with chili sauce' > SLQZ mo'lly, MZ moll

mula 'female mule' > Z/T muly, MZ mul, SLQZ muuall

panela 'sugar loaf' > Z pinyal (YB/Zoo panel, MZ paneel)

real (a coin) > YB ryel ~ riel, A rriali, SLQZ rryeelly, MZ räjl

vigilia 'vigil' > Z bixily

Manuel (name) > Z wely, SLQZ Ne'll

Pablo (name) > T bâly

Samuel (name) > Z wely, T mel.

1(c) Zapotec fortis or lenis /l/ can result from other Spanish consonants:

from /r/:

cocinero 'cook' > Z kusnely

compadre 'godfather' > A umpali, SLQZ mbaaly, MZ mbaal, I mbale

comadre 'godmother' > I male

durazno 'peach' > YB tlas

naranja ‘orange’ > T láž

sombrero ‘hat’ > A umbrelu, MZ xhumbreel, SLQZ zh:ommreel;

from /d/:

medio (a coin) > SLQZ mùuully, MZ meel (and probably A belliu).

2(a) Spanish ll [x] > fortis or lenis l in Zapotec:

llave ‘key’ > SLQZ lye’i, MZ liäii

cuchillo ‘knife’ > MZ guchiil, A gutsilu, SLQZ bchiilly (but YB cwshiy,

Zoo cwshiyw, I gudxíu)

Castilla ‘Castile’ > ZooZ (dizha’)xtil, YB (dizhe’e)xtil, A (la’a)xtila, MZ (didx)xtiil ‘Spanish (language)’⁹

manzanilla ‘camomile’ > MZ maNsanil (N = fortis /n/)

molinillo ‘hand mill’ > SLQZ mo/urniilly, MZ morniil

novillo ‘young bull’ > Z nibily

silla ‘chair’, ‘saddle’ > Z xily, T σ&ily, MZ (yag)xhil, SLQZ zhi’iilly, A xila’.

2(b) A couple of loans provide evidence of early *yeísmo* (i.e. the pronunciation of Spanish *ll* as [y]):

caballo ‘horse’ > Z kwey, at k^wáy, Co wai, YB cabey, MZ cabaii, Zoo cabayw,

SLQZ caba’i, Q g^way

pollo ‘chicken’ > Co poi, I buyu’.

3(a) Spanish r- (a trill) > Zapotec rr-/r- (one example):

real (a coin) > YB ryel ~ riel, A rriali, SLQZ rryeelly, MZ räjl.

3(b) Spanish -rr- and -r- > Zapotec (lenis) r:

arroz ‘rice’ > Z arùz, YB roz

barato ‘cheap’ > Z bràd (also MZ bará’t, Zoo baratw, YB barat, SLQZ baraa’t)

morado ‘purple’ > Z m(b)ràd (also YB morad, Zoo moradw, A moradu)

naranja ‘orange’ > A maraψ)a, SLQZ nraazh, MZ naraax

Andrés (name) > MZ ndrè(h)zh.

3(c) Zapotec /r/ can also result from Spanish /l/ and /ʎ/:

alguacilillo (dim. of alguacil ‘constable’) > SLQZ lasliiery

albañil ‘mason’ > Z arbanyil

alcalde ‘mayor’ > Zoo rcal, YB rcal, SLQZ rca’alldy

clavija ‘beam’ > SLQZ garbiizh, Z (yag-)kabizh

coles ‘cabbages’ > YB corix, Ca kórìσ&, SLQZ curehehizh, MZ curijxh

culantro ‘cilantro’ > SLQZ cura’aann

molinillo ‘hand mill’ > SLQZ mo/urniilly, MZ morniil.

In some cases (as in *albañil*, *alcalde*, *molinillo*) this development can be explained by dissimilation.

In one case, Zapotec -r- has probably resulted from Spanish -d-:

maravedí (an old coin) > Z mrí ‘money’, T mbrii ‘six centavos’.¹⁰

To summarize the situation with the borrowing of sonorants: (1) Spanish /m/ is borrowed as fortis only when the loss of the following consonant causes its compensatory

lengthening; (2) initial /n/ is borrowed as lenis, while intervocalic and word-final /n/ may be borrowed as lenis or fortis. This situation may have something to do with the distribution of the fortis and lenis /n/ in native Zapotec words: thus, Benton (1988:15-16) does not reconstruct word-initial *nn- or intervocalic *-n- in his version of Proto-Zapotec; (3) Spanish ñ is borrowed as lenis /n/, with the exception of the word *pañó*, likely to have been borrowed through Nahuatl, where Spanish ñ > Zapotec y; (4) Spanish /l/ and /ʎ/ are borrowed as either fortis or lenis /l/ and occasionally as an /r/; (5) at least two loanwords provide evidence for early *yeísmo*; (6) Spanish trilled /r/ is occasionally borrowed as fortis in the dialects that distinguish between fortis and lenis /r/; (7) in a number of cases, Spanish /r/ or /d/ have been borrowed as Zapotec fortis or lenis /l/.

6. In the loanwords that only recently entered Zapotec, the pattern of borrowing has changed considerably. First, recent loans naturally reflect changes undergone by the phonology of American Spanish since the sixteenth century. One of these is the velarization of the palatal sibilant /ʃ/, reflected in early loans such as A (*daa*)*ribeỹi* < *arveja* ‘pea’, to /x/. Second, prolonged exposure to the phonological system of Spanish due to extensive lexical borrowing and massive bilingualism have exercised a powerful influence on the borrowing strategies of the individual dialects and of Zapotec as a whole. Changes in the borrowing pattern are partly due to the introduction of the phonemes /f/, /x/ (or /h/), and in some cases /r/ (e.g., in Coatlán Zapotec, cf. Robinson 1963) in the phonological systems of Zapotec dialects. Thus, while in earlier loans both /f/ and /x/ were rendered by stops (cf. YB *lberg*, SLQZ *albe’erg* < *arveja* ‘pea’), in more recent borrowings they are borrowed as fricatives (cf. MZ *alberj* ‘pea’).¹¹ Exposure to

Spanish has also reinforced contrasts that existed in Zapotec only at a subphonemic level, triggering rearrangements in the distribution of native phonemes. Both types of influence can be observed when comparing the treatment of Spanish consonants in the early and the more recent strata of borrowed vocabulary. Thus, in Cajonos Zapotec both voiced and voiceless Spanish obstruents are usually reflected in early loans as lenis (e.g. *béy* < *pañó*, *bêd* < *Pedro*); in recent loans Spanish voiceless stops are borrowed as fortis, and voiced stops as lenis. This borrowing pattern has caused fortis /p/ to appear in word-initial position, which it never does in native words, and has also led to a greater importance of voicing in contrasting the two series of obstruents (cf. Nellis and Hollenbach 1980:93, 104-05).¹² /r/ and /l/ in the same dialect sometimes replace each other in early borrowings (e.g. *m:ál* < *comadre* ‘godmother’, *kóriř* < *coles* ‘cabbages’), but in recent loans they are borrowed as /r/ and /l/, respectively, possibly due the introduction of a greater contrast between the two liquids owing to a steady flow of Spanish loans. Also, while in early loans Spanish trilled /r/ was borrowed as lenis, in later loans it can be rendered in Zapotec by a fortis rhotic, cf. *címâr* < *chamarra* ‘blanket’ (an old loan) versus *r:êy* < *raya* ‘line’ (a recent loan). It has already been hypothesized above that fortis /r/ is a recent innovation in some Zapotec dialects, conceivably triggered by a synchronic dissociation between lenis /r/ and its etymological fortis counterpart. It is also likely that this Zapotec-internal development received additional reinforcement from the existence of two rhotics in Spanish loanwords.

Dialects other than Cajonos Zapotec show comparable adjustments in their borrowing strategies, generally in the direction of a greater attuning to the phonology of Spanish. Among these may be mentioned the change in the rendering of Spanish /n/ and

/l/: while in early loans these could be rendered with both fortis and lenis native phonemes without a discernible distributional pattern, in later loans they are mostly borrowed as lenis. Some differences in the treatment of Spanish consonants in the early and late loans are summarized in Table 4.

TABLE 4
Changes in the Pattern of Consonant Borrowing

Spanish consonants	Early loans	Recent loans
p-b, t-d, k-g	borrowed as f or l; voicing unimportant for distribution	borrowed as f or l; borrowing pattern based on voicing
s	borrowed as l	borrowed as f
f	borrowed as /p/, /b/	borrowed as /f/
j [x/h]	borrowed /g/	borrowed as [x/h]
m	borrowed as /m/	borrowed as /m/
n	borrowed as f or l	borrowed as l
l	borrowed as f or l	borrowed as l
r	borrowed as l	borrowed as l
rr	borrowed as l	borrowed as f or l

7. This paper has examined the adaptation of Spanish loanwords in various Zapotec dialects. Although the main focus of the paper has been early loans, changes in the borrowing strategy that occurred between the earliest and the more recent layers of loans have also been considered. A comparison of the borrowing patterns during these periods indicates that contact with Spanish has exercised a considerable influence on Zapotec phonology, the most salient elements of which are the introduction of the phonemes /f/, /x/ and (possibly) /r/, triggering of a greater importance of voicing in the fortis/lenis opposition of obstruents (cf. Smith Stark 2000), changes in the distribution of /p/, (possibly) the creation of a greater contrast between /r/ and /l/, and phonemicization, in some dialects, of a fortis /r/.

NOTES

¹In addition to the dialects whose consonantal inventories are presented in Table 1, the phonological systems of Yalálag, Choapan, Atepec, Quioquitani, Elotepec, Zaniza, and Córdoba's (= 16th-century Valley) Zapotec have also been examined.

²I give here the consonantal inventory of the more conservative Toledan dialect as it presents the greatest number of phonemic contrasts. While this is not essential with respect to such features as sibilant voicing and the preservation of /β/ as a separate phoneme (both lost by that time in the Old Castilian dialect), it is important for the contrastive status of /s (z)/ and /ʃ (z)/ (which by that time had already merged in Andalusian). And, even though this inventory assumes that the old affricates /ts/ and /dz/ had already given way to the corresponding fricatives, at least two early loans provide support for their affricated pronunciation (see below). The only evidence for early *yeísmo* is provided by the treatment of <-ll-> in the word *caballo* 'horse'. (On the phonology of sixteenth-century American Spanish see, e.g., Lapesa 1980:282ff, Rivarola 1991:450ff, Parodi 1995:39ff, and the extensive bibliography cited therein.)

³Córdoba (1578a:73) notes what amounts to dialectal variation in this respect: "A la. r. hazen que sirua de. t. vt torobaya, pro totobaya. Ciroo, pro citao" ('they make *r* serve as *t*, as in *torobaya* for *totobaya*, *ciroo* for *citao*').

⁴Spanish loans in Zapotec, unlike the contemporary borrowings in Nahuatl (cf. González Cazanova 1977:144, 149), Mayan (cf. Parodi 1987:346-47 and 1995:50-51) and some other Mesoamerican languages (cf. Campbell 1991:171-72; Canfield 1934:210-16) do not give evidence of a phonemic difference in the pronunciation of /b/ (< Latin -p-, b-) and /β/ (< Latin -v-, -b-). The outcomes of intervocalic -b- in the word *caballo* in

the dialects which drop the pretonic vowel, such as Z (*kwey*) cannot be taken as an evidence of its fricativized pronunciation since the native cluster /kb/ has the same outcome (cf. Z *kwez*, the Potential form of *bez* ‘to cry, to shout’).

⁵The agreement of several Zapotec dialects makes it unnecessary to analyze the second part of the word as Ca *yìs&* ‘grass’ (Nellis and Hollenbach 1980:104). Borrowing through Nahuatl or another medium is likely in this case (cf. Nahuatl *colex* < Spanish *coles* cited in González Casanova 1977:151). Comparable forms in other Mesoamerican languages are quoted in Campbell (1991:176).

⁶In the treatment of Spanish intervocalic /k/ or clusters containing it Zaniza Zapotec distinguishes three layers of loanwords. In the earliest layer, -/k/- > -g-, as in *vaca* ‘cow’ > *bàg*. In a later layer, Sp. -/k/- > -j- (phonetically [h]), e.g. *loco* ‘mad’ > *loj*, *Lucas* > *Lyúj*, *Francisco* > *Sijw* (the treatment of Spanish /s/ here is also different from that of the earliest loans). In the most recent borrowings, Spanish -/k/- > Z -k-.

⁷In more recent loans, Spanish *ch* is borrowed as such in both Cajonos and Atepec (cf. Nellis and Hollenbach 104).

⁸Zapotec borrowings in general are not a good source of information on the voicing of sibilants.

⁹Numerous other words, mostly names of objects new to Mesoamerican economy, contain the word ‘Castilla’ as a component part, for example YB *yetxtil* ‘bread’ (*yet* ‘tortilla’), *za’axtil* ‘pomegranate’ (*za’a* ‘ear of corn’), *bi’oxtil* ‘maggot’ (*bi’o* ‘flea’), *yaxtil* ‘tall reed’ (*ya* ‘reed’); ZooZ *zaxtil* ‘pomegranate’, *yetextil* ‘bread’; Co *yokšštil* ‘soap’; A *ettaxtila* ‘bread’, *daaxtila* ‘(broad) bean’ (*daa* ‘(kidney) bean’), *ỹua’xtila* ‘wheat’ (*ỹua* ‘maize’); SLQZ *gueht x:tiilly* ‘pan’, *bihx:tiilly* ‘soap’; MZ *yätxtiil* ‘bread’,

säxtil ~ *zäxtil* ‘pomegranate’ (*zä* ‘ear of corn’), *biäxtil* ‘soap’, *bedzxttil* ‘mint’ (*bedz-* ‘seed of fruit’), *manxanilxttil* ‘camomile sp.’.

¹⁰I thank Dr. Kevin Terraciano for suggesting to me this etymology. Phonetically, the reduction of a four-syllable word to one syllable is not unusual (cf. T *dì* from Spanish *melodía*). As one of the strategies for adjusting Spanish words to the mostly bisyllabic structure of Zapotec vocabulary, there is a tendency, especially in early loans, to drop pretonic syllables (e.g. Z *mìzh* < *camisa* ‘shirt’; Co *wai* < *caballo* ‘horse’; Zoo *lmet*, YB *lmet* < *limeta* ‘bottle’; YB/Zoo *migw*, Z *miw* < *amigo* ‘friend’; A *yèrù* < *agujero* ‘hole’). In some cases, only the pretonic vowel drops (MZ *mbaal*, SLQZ *mbaaly* < *compadre* ‘godfather’; YB/Zoo *xcan*, MZ *xcaan* < *escaño* ‘bench with a back’; Z *kwey*, T *k^wáy*, Q *g^way* < *caballo* ‘horse’; YB/Zoo *dmigw* < *domingo* ‘Sunday’; YB *rmech*, SLQZ [...]*rmuudy* < *remedio*). This tendency, however, is counterbalanced by the many instances in which the pretonic syllable or syllables have been preserved.

¹¹Other examples of this borrowing chronology include Co (*kos*)*ak* < *ajo* ‘garlic’ (early shape of the word preserved e.g. in Z *àzh*); A *mécú* < *bermejo* ‘vermilion’, *necu* < *conejo* ‘rabbit’ (the more recent loan in A is *cuneju*; the original palatal fricative is reflected, with metathesis, in Ca *žnékw*), *yèrù* < **geru* < *agujero* ‘hole’ (*g-* > *y-*/__*i*, *e* in A; a sixteenth-century treatment of the same fricative can be seen in A *gúy)á* < *aguja* ‘needle’); T *ānk*, SLQZ *a’nngl* < *angel* (cf. more recent T *āhy* < *Ángela*, SLQZ *Anjalye’nn* < *Angelina*).

¹²Explanation of the treatment of Spanish obstruents in recent loans in terms of coexistent phonemic systems (cf. Fries and Pike 1949) is also possible. Such an

explanation would assume that in the speech of bilinguals Spanish obstruents are contrasted as voiced and voiceless and native obstruents as fortis and lenis.

APPENDIX

(1) Spanish loanwords were examined in the following Zapotec dialects:

- (a) Northern: Atepec (A), Cajonos (Ca), Yatzachi El Bajo (YB), Zoogocho (Zoo);
- (b) Central: Isthmus Zapotec (I), Mitla (MZ), San Lucas Quiaviní Zapotec (SLQZ);
- (c) Southern: Santa María Coatlán Zapotec (Co), Quiegolani (Q);
- (d) Western: San Lorenzo Texmelucan Zapotec (T), Zaniza Zapotec (Z).

There have been only two studies devoted to Spanish loanwords in Zapotec, Fernández' (1965) paper on Mitla and Pickett's (1992) article on Isthmus Zapotec. The other loans on which the present study is based were culled from various dictionaries and wordlists, as follows:

Atepec: Neil Nellis and Jane Goodner de Nellis. 1983. *Diccionario zapoteco de Juarez*.

México, D.F.: Instituto Lingüístico de Verano;

Cajonos: Nellis and Hollenbach 1980;

Yatzachi El Bajo: Butler, Inez M. 1997. *Diccionario zapoteco de Yatzachi*. Tucson, AZ:

Instituto Lingüístico de Verano;

Zoogocho: Long, Rebecca C., and Sofronio Cruz M. 1999. *Diccionario zapoteco de San*

Bartolomé Zoogocho, Oaxaca. Instituto Lingüístico de Verano.

Isthmus: Pickett, Velma B. 1992. *Palabras de préstamo en zapoteco del Istmo*. *Scripta*

philologica in honorem Juan M. Lope Blanch, ed. Elizabeth Luna Traill, pp. 69-

76. México: UNAM // Pickett, Velma et al. 1979. *Vocabulario zapoteco del*

Istmo. México, D.F.: Instituto Lingüístico de Verano;

Mitla: Fernández de Miranda, María Teresa. 1965. *Préstamos españoles en el zapoteco de*

Mitla. *AINAH* 17:259-73 // Stubblefield, Morris, and Carol Miller de

Stubblefield. Diccionario zapoteco de Mitla, Oaxaca. México, D.F.: Instituto Lingüístico de Verano;

SLQZ: Munro and Lopez 1999;

Coatlán: Robinson 1963;

Quiegolani: Regnier 1993;

Texmelucan: Speck, Charles H. 1978. The phonology of Texmelucan Zapotec verb irregularity. M.A. thesis, University of North Dakota;

Zaniza: author's field notes.

(2) The most recurring of the early Spanish loans belong to several lexical categories. The loanwords that may have entered Zapotec later than the sixteenth century are given in brackets.

Plants and foodstuffs: aceite, ajo, arveja, arroz, azúcar, col, (cuajo), culantro, chocolate, (durazno), garbanzo, granada, mezcal, mole, mostaza, naranja, pan, panela, papaya, queso, sandía, trigo.

Animals: caballo, cochi, conejo, chivo, macho, mico, micho, mula, nigua, novillo, pollo, (toro), vaca, yegua.

Utensils and the like: aguja, almohada, batea, (bolsa), botón, canoa, clavija, cuchara, cuchillo, escaño, esquina, estaca, (gancho), garrote, (horno), jabón, jarro, jícara, lazo, limeta, machete, mazo, mecha, mesa, molinillo, (muñeca), navaja, paño, plato, servilleta, silla, silla de montar, (surco), taza, teja, tijeras, timón, (tienda, tinta, tiro, trompo).

Dress: camisa, (cincho, cinta), media, sombrero, zapato.

Professions/institutions: albañil, alcalde, banco, capitán, Castilla, (ciudad), cocinero,
escuela, mozo, pastor, soldado, testigo.

Money: dinero, maravedí, medio, peso, tomín, real.

Religion: anima, amigo, comadre, compadre, cruz, dios, gigante, misa,
remedio, sacristán, santo, (vicio), vigilia.

Calendar: domingo, (lunes, sábado), semana, (tiempo).

Adjectives and misc.: (azul), barato, hasta, (loco), manso, morado.

Proper names: Andrés, José, Juan, Juana, Lucas, Luis, Luisa, mixe, Pablo, Pedro,
Tomás.

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