

PROBLEM SET: PAPABUCO CONSONANTS

Natalie Operstein
University of California, Los Angeles

Compare the cognates from Zaniza Zapotec and Texmelucan Zapotec, languages from the Papabuco branch of Zapotec spoken in the state of Oaxaca, Mexico. Reconstruct the consonant inventory of Proto-Papabuco and state the sound changes that have taken place in each language.

In the following examples, double vowels (VV) represent laryngealized vowels, and vowels followed by a raised comma (v') represent checked (glottalized) vowels. Do not attempt to reconstruct the vowels, and ignore the material in brackets.

ZANIZA ZAPOTEC	TEXMELUCAN ZAPOTEC	GLOSS
tib	tub	'one'
tʃup	cup	'two'
ʃun	tʃon	'three'
tap	tap	'four'
gadʒ	gaʃ	'seven'
ʃup	ʃup	'eight'
gal	gal	'twenty'
baŋ tʃug	baŋ cug	'animal'
zʲiŋ	dʒiŋ	'deer'
lez	lez	'possum'
biʃ	bitʃ	'rabbit'
gup	gop	'armadillo'
biriz	briiz	'squirrel'
biziŋ	bziŋ	'mouse, rat'
ʃigud	tʃigud	'cattle'
kuʃ	kutʃ	'pig' (< Sp. <i>cuchi</i>)
ʃigiŋ	tʃiŋ	'bird'
bisi	psi	'eagle'
bijah	bjak	'crow'
kol	kol	'turkey'
tʃez	teez	'nest'
bitʃa'	pca'	'louse'
g ^w i	g ^w ii	'black widow'
uŋe	gunē	'scorpion'
bijez	bjadz	'leafcutter ant'
ula	gula	'caterpillar'
ne	ne	'tail'
be'j	be'j	'mushroom'
dub	dub	'maguey'
bitʃuʃ	pcuʃ	'tomato'
get	ʒet	'squash'
giŋ	ʒiŋ	'chili'
biziz̥	bdʒidʒ	'pineapple'

le'w	le'w	'zapote'
urwi zi	urwi zi	'lemon'
geɕ	ʒetʃ	'thorn'
ʎag	ʎag	'leaf'
ʃig	ʃig	'pine cone'
giʒ	ʒiʒ	'grass'
k ^w al	k ^w el	'corn husk'
ʎuɕ	ʎutʃ	'corn silk'
mbetʃ	mbec	'people'
mbaʎ	mbaʎ	'godfather' (< Sp. <i>compadre</i>)
zan	zan	'opposite-sex sibling'
ih	ik	'head'
ru'	ru'	'mouth'
ʎuz	ʎudʒ	'tongue'
ladʒ	laʒ	'heart, liver'
ʎidʒ	liʒ	'placenta'
(ŋ)gidʒ	(ŋ)ʒiʒ	'navel'
tʃib	tib	'knee'
reŋ	reŋ	'blood'
tʃi'	ti'	'voice'
nedʒ	neʒ	'clothes'
g ^w an	g ^w an	'mirror; glasses'
beh	bek	'necklace'
bizjŋ	bdʒjŋ	'foam'
bigu	bgu	'knot'
giʃ	ʒiʃ	'net'
k ^w it	k ^w it	'side, wall'
bisi'ŋ	psi'ŋ	'tile; shard'
dʒa'n	ʒa'n	'plate'
k ^w i	k ^w i	'food'
git	ʒit	'tortilla'
kub	kub	'dough'
nidʒ	niʒ	'milk'
keʒ	ceʒ	'cheese' (< Sp. <i>queso</i>)
nap	nap	'good'
kidʒ	ciʒ	'hard'
zig	zig	'hot'
dʒa	ʒa	'high'
tʃuz	cudʒ	'slippery'
ʒeɕ	dʒetʃ	'rough'
uʒ	uʒ	'small, fine'
ʎa	ʎa	'bitter'
na	na	'red'
kit	cit	'well, good'
mi'	mi'	'small'
iʎ	iʎ	'big'

waʃ	watʃ	‘dry’
li	li	‘straight’
maʒ	maʒ	‘tame’ (< Sp. <i>manso</i>)
tʃiɫ	tiiɫ	‘upside down’
ulas	gulas	‘previously’
les	les	‘a long time’
k ^w e'	k ^w e'	‘(do) not’
sal	sal	‘to wet’
kaʃ	katʃ	‘to hide’
laʒ	laʒ	‘to end’
ded	ded	‘to cross’
nak	nah	‘to be’
nis	nis	‘water’
gej	ʒej	‘rain’
uzi	guzii	‘thunder’
do g ^w iʒ	doo g ^w idʒ	‘sun’
dʒaaw	ʒoow	‘river’
neʒ	nez	‘road’
dʒuʒ	(n)ʒooʒ	‘God’ (< Sp. <i>dios</i>)
ju' weʒ	ju' wedʒ	‘church’
sa'	sa'	‘party’
na'n	na'n	‘year’
uʒe	gudʒe	‘afternoon’
ki	ci	‘crime, fault’
lola'	lola'	‘Oaxaca’

[Data for Zaniza Zapotec are from the author's fieldwork and for Texmelucan Zapotec are from Speck, Charles. 1978. *The phonology of Texmelucan Zapotec verb irregularity*. University of North Dakota M.A. Thesis and Speck, Charles. 2005. *Vocabulario zapoteco (parte zapoteco-español)*. Summer Institute of Linguistics Manuscript]

SUGGESTED RECONSTRUCTION

ZANIZA ZAPOTEC	TEXMELUCAN ZAPOTEC	GLOSS	RECONSTRUCTION
tʃup	cup	‘two’	*p
tap	tap	‘four’	
gup	gop	‘armadillo’	
nap	nap	‘good’	
baŋ tʃug	baŋ cuɡ	‘animal’	*b
biʃ	bitʃ	‘rabbit’	
beʃ	beʃ	‘mushroom’	
mbetʃ	mbec	‘people’	
tib	tub	‘one’	
dub	dub	‘maguey’	
kub	kub	‘dough’	
bigu	bgu	‘knot’	
bizɨŋ	bdʒɨŋ	‘foam’	
bijah	bjak	‘crow’	
bijeʒ	bjadʒ	‘leafcutter ant’	
biriz	briiz	‘squirrel’	
bizɨŋ	bziŋ	‘mouse, rat’	
bitʃaʼ	pcaʼ	‘louse’	
bitʃuʃ	pcuʃ	‘tomato’	
bisi	psi	‘eagle’	
bisiʃŋ	psiʃŋ	‘tile; shard’	
tib	tub	‘one’	*t
tap	tap	‘four’	
git	ʒit	‘tortilla’	
kit	cit	‘well, good’	
k ^w it	k ^w it	‘side, wall’	
do g ^w iʒ	doo g ^w idʒ	‘sun’	*d
dub	dub	‘maguey’	
ded	ded	‘to cross’	
ʃigud	tʃigud	‘cattle’	
kaʃ	katʃ	‘to hide’	*k
kol	kol	‘turkey’	
kuʃ	kuʃ	‘pig’	
kub	kub	‘dough’	
kez	cez	‘cheese’	
kidʒ	ciʒ	‘hard’	
kit	cit	‘well, good’	
ki	ci	‘crime; fault’	
ih	ik	‘head’	
beh	bek	‘necklace’	
nah	nak	‘to be’	
bijah	bjak	‘crow’	

gal	gal	'twenty'	*g
gadʒ	gaʃ	'seven'	
gup	gop	'armadillo'	
ʃigud	tʃigud	'cattle'	
bigu	bgu	'knot'	
zig	zig	'hot'	
ʃig	ʃig	'pine cone'	
baŋ tʃuɡ	baŋ cuɡ	'animal'	
git	ʒit	'tortilla'	
giŋ	ʒiŋ	'chili'	
giʃ	ʒiʃ	'net'	
(ŋ)gidʒ	(ŋ)ʒiʒ	'navel'	
gej	ʒej	'rain'	
geʃ	ʒetʃ	'thorn'	
get	ʒet	'squash'	
uzi	guzii	'thunder'	
uʒe	gudʒe	'afternoon'	
uŋe	gunē	'scorpion'	
ula	gula	'caterpillar'	
ulas	gulas	'previously'	
k ^w it	k ^w it	'side, wall'	*k ^w
k ^w i	k ^w i	'food'	
k ^w e'	k ^w e'	'(do) not'	
k ^w al	k ^w el	'corn husk'	
g ^w an	g ^w an	'mirror; glasses'	*g ^w
g ^w i	g ^w ii	'black widow'	
do g ^w iʒ	doo g ^w idʒ	'sun'	
tʃup	cup	'two'	*c
tʃuʒ	cudʒ	'slippery'	
baŋ tʃuɡ	baŋ cuɡ	'animal'	
biʃa'	pca'	'louse'	
biʃuʃ	pcuʃ	'tomato'	
mbetʃ	mbec	'people'	
tʃi'	ti'	'voice'	
tʃib	tib	'knee'	
tʃiʌ	tiiʌ	'upside down'	
tʃez	teez	'nest'	
dʒa	ʒa	'high'	*ʒ
dʒa'n	ʒa'n	'plate'	
dʒaaw	ʒoow	'river'	
dʒuʒ	(ŋ)ʒooʒ	'God'	
gadʒ	gaʃ	'seven'	
ladʒ	laʃ	'heart, liver'	
nedʒ	neʃ	'clothes'	
nidʒ	niʃ	'milk'	

(ŋ)gidz	(ŋ)jiŋ	‘navel’	
ru'	ru'	‘mouth’	*r
reŋ	reŋ	‘blood’	
biriz	briiz	‘squirrel’	
urwi zi	urwi zi	‘lemon’	
ʂun	tʂon	‘three’	*tʂ
ʂigud	tʂigud	‘cattle’	
ʂigiŋ	tʂiŋ	‘bird’	
biʂ	bitʂ	‘rabbit’	
zeʂ	dzetʂ	‘rough’	
ʎuʂ	ʎutʂ	‘corn silk’	
kuʂ	kutʂ	‘pig’	
zɿŋ	dzɿŋ	‘deer’	*dz
bizɿz	bdzɿdz	‘pineapple’	
bizɿŋ	bdzɿŋ	‘foam’	
bijeɿz	bjadz	‘leafcutter ant’	
ʎuzɿ	ʎudz	‘tongue’	
ju' wezɿ	ju' wedz	‘church’	
sa'	sa'	‘party’	*s
sal	sal	‘to wet’	
bisi	psi	‘eagle’	
bisi'ŋ	psi'ŋ	‘tile; shard’	
nis	nis	‘water’	
ulas	gulas	‘previously’	
zan	zan	‘opp.-sex sibling’	*z
zig	zig	‘hot’	
urwi zi	urwi zi	‘lemon’	
uzi	guzii	‘thunder’	
bizɿŋ	bzɿŋ	‘mouse, rat’	
ʎez	lez	‘possum’	
nez	nez	‘road’	
biriz	briiz	‘squirrel’	
ʃuŋ	ʃuŋ	‘eight’	*ʃ
ʃig	ʃig	‘pine cone’	
giʃ	ʃiʃ	‘net’	
bitʃuʃ	pcuʃ	‘tomato’	
uɿz	uɿz	‘small, fine’	*ɿz
giɿz	ʃiɿz	‘grass’	
laɿz	laɿz	‘to end’	
keɿz	ceɿz	‘cheese’	
mi'	mi'	‘small’	*m
maɿz	maɿz	‘tame’	
nap	nap	‘good’	*n
nah	nak	‘to be’	
nis	nis	‘water’	
nidz	niɿ	‘milk’	

ʂun	tʂon	‘three’	
na'n	na'n	‘year’	
zan	zan	‘opp.-sex sibling’	
ne	ne	‘tail’	
uŋe	gunẽ	‘scorpion’	
nedʒ	neʃ	‘clothes’	
nez	nez	‘road’	
na	na	‘red’	*ŋ
na'n	na'n	‘year’	
ʃuŋ	ʃuŋ	‘eight’	
reŋ	reŋ	‘blood’	
baŋ tʃuŋ	baŋ cuŋ	‘animal’	
bisi'ŋ	psi'ŋ	‘tile; shard’	
biziŋ	bziŋ	‘mouse, rat’	
lola'	lola'	‘Oaxaca’	*l
ladʒ	laʃ	‘heart, liver’	
laʒ	laʒ	‘to end’	
ula	gula	‘caterpillar’	
ulas	gulas	‘previously’	
gal	gal	‘twenty’	
k ^w al	k ^w el	‘corn husk’	
kol	kol	‘turkey’	
lez	lez	‘possum’	
les	les	‘a long time’	
le'w	le'w	‘zapote’	
liɖʒ	liʃ	‘placenta’	
li	li	‘straight’	
la	la	‘bitter’	*ɬ
lag	lag	‘leaf’	
luʒ	luɖʒ	‘tongue’	
luʂ	lutʃ	‘corn silk’	
mbaɬ	mbaɬ	‘godfather’	
iɬ	iɬ	‘big’	
waʂ	watʃ	‘dry’	*w
ju' weʒ	ju' wedʒ	‘church’	
urwi zi	urwi zi	‘lemon’	
dʒaaw	ɟoow	‘river’	
le'w	le'w	‘zapote’	
ju' weʒ	ju' wedʒ	‘church’	*j
bijah	bjak	‘crow’	
bijeʒ	bjadʒ	‘leafcutter ant’	
be'j	be'j	‘mushroom’	
gej	ʒej	‘rain’	

PROTO-PAPABUCO CONSONANTS

	LABIAL	ALVEOLAR	PALATAL	VELAR
STOP	*p *b	*t *d	*c *ɟ	*k, *k ^w *g, *g ^w
AFFRICATE			*tʃ *dʒ	
FRICATIVE		*s *z	*ʃ *ʒ	
TAP		*ɾ		
NASAL	*m	*n	*ɲ	
LIQUID		*l	*ʎ	
GLIDE	*w		*j	

SOUND CHANGES IN TEXMELUCAN ZAPOTEC

DESCRIPTION	EXAMPLE IN TEXMELUCAN ZAPOTEC	COGNATE IN ZANIZA ZAPOTEC
Loss of *i in initial syllables of certain disyllabic words (creates the context for the next change).	bgu	bigu
Devoicing of *b before voiceless consonants.	psi	bisi
Palatalization of *k before front vowels.	ceʒ	keʒ
Palatalization of *g before front vowels.	jit	git
Depalatalization of *c before front vowels.	ti'	tʃi'

SOUND CHANGES IN ZANIZA ZAPOTEC

DESCRIPTION	EXAMPLE IN ZANIZA ZAPOTEC	COGNATE IN TEXMELUCAN ZAPOTEC
Change of non-initial *k to /h/.	ih	ik
Loss of initial *g before /u/ in disyllabic words.	ulas	gulas
Affrication of *c.	tʃup	cup
Affrication of *ɟ.	dʒa	ɟa
Fricativization of *tʃ.	ʃun	tʃon
Fricativization of *dʒ.	ʒin	dʒin
Palatalization of *n before /e/.	neʒ	nez
Palatalization of *l before front vowels.	ʎe'w	le'w