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PROBLEM SET:

PAPABUCO CONSONANTS

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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'
ʃuŋ	ʃuŋ	'eight'
gal	gal	'twenty'
baŋ tʃug	baŋ cuŋ	'animal'
zɪŋ	dʒɪŋ	'deer'
ʎez	lez	'possum'
biʃ	bitʃ	'rabbit'
gup	gop	'armadillo'
biriz	briiz	'squirrel'
bizɪŋ	bzɪŋ	'mouse, rat'
ʃigud	tʃigud	'cattle'
kuʃ	kutʃ	'pig' (< Sp. <i>cuchi</i>)
ʃigɪŋ	tʃɪɪŋ	'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	gunẽ	'scorpion'
bijezɿ	bjadʒ	'leafcutter ant'
ula	gula	'caterpillar'
ne	ne	'tail'
be'j	be'j	'mushroom'
dub	dub	'maguey'
bitʃuʃ	pcuʃ	'tomato'
get	ʒet	'squash'

giŋ	ʃiŋ	‘chili’
bizizɿ	bdzidz	‘pineapple’
ʎe'w	le'w	‘zapote’
urwi zi	urwi zi	‘lemon’
geʃ	ʃetʃ	‘thorn’
ʎag	ʎag	‘leaf’
ʃig	ʃig	‘pine cone’
giʒ	ʃiʒ	‘grass’
k ^w al	k ^w el	‘corn husk’
ʎuʃ	ʎutʃ	‘corn silk’
mbetʃ	mbec	‘people’
mbaʎ	mbaʎ	‘godfather’ (< Sp. <i>compadre</i>)
zan	zan	‘opposite-sex sibling’
ih	ik	‘head’
ru'	ru'	‘mouth’
ʎuzɿ	ʎudz	‘tongue’
ladz	ʎaʃ	‘heart, liver’
ʎidz	ʎiʃ	‘placenta’
(ŋ)gidz	(ŋ)ʃiʃ	‘navel’
tʃib	tib	‘knee’
reŋ	reŋ	‘blood’
tʃi'	ti'	‘voice’
nedz	neʃ	‘clothes’
g ^w an	g ^w an	‘mirror; glasses’
beh	bek	‘necklace’
bizjŋ	bdzjŋ	‘foam’
bigu	bgu	‘knot’
giʃ	ʃiʃ	‘net’
k ^w it	k ^w it	‘side, wall’
bisi'ŋ	psi'ŋ	‘tile; shard’
dza'n	ʃa'n	‘plate’
k ^w i	k ^w i	‘food’
git	ʃit	‘tortilla’
kub	kub	‘dough’
nidz	niʃ	‘milk’
kez	ceʒ	‘cheese’ (< Sp. <i>queso</i>)
nap	nap	‘good’
kidz	ciʃ	‘hard’
zig	zig	‘hot’
dza	ʃa	‘high’
tʃuzɿ	cudz	‘slippery’
zeʃ	dzetʃ	‘rough’
uʒ	uʒ	‘small, fine’
ʎa	ʎa	‘bitter’
ŋa	ŋa	‘red’
kit	cit	‘well, good’

mi'	mi'	'small'
iʎ	iʎ	'big'
waʂ	watʃ	'dry'
ʎi	li	'straight'
maʒ	maʒ	'tame' (< Sp. <i>manso</i>)
tʃiʎ	tiiʎ	'upside down'
ulas	gulas	'previously'
ʎes	les	'a long time'
k ^w e'	k ^w e'	'(do) not'
sal	sal	'to wet'
kaʂ	katʃ	'to hide'
laʒ	laʒ	'to end'
ded	ded	'to cross'
nak	nah	'to be'
nis	nis	'water'
gej	ʃej	'rain'
uzi	guzii	'thunder'
do g ^w iʒ	doo g ^w idʒ	'sun'
dʒaaw	ʃoow	'river'
ʃez	nez	'road'
dʒuʒ	(ɲ)ʃooʒ	'God' (< Sp. <i>dios</i>)
ju' wez	ju' wedʒ	'church'
sa'	sa'	'party'
ʃa'n	ʃa'n	'year'
uzɛ	gudʒe	'afternoon'
ki	ci	'crime, fault'
lola'	lola'	'Oaxaca'

The data for Zaniza Zapotec are from the author's fieldwork and for Texmelucan Zapotec from Speck, Charles. 1978. *The phonology of Texmelucan Zapotec verb irregularity*. University of North Dakota M.A. Thesis as well as 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 cug	‘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	bzɨŋ	‘mouse, rat’	
bitʃaʼ	pcaʼ	‘louse’	
bitʃuf	pcuf	‘tomato’	
bisi	psi	‘eagle’	
bisiʃŋ	psiʃŋ	‘tile; shard’	
tib	tub	‘one’	*t
tap	tap	‘four’	
git	ʃit	‘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	kutʃ	‘pig’	
kub	kub	‘dough’	
kez	ceʒ	‘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 tʃug	baŋ cuŋ	'animal'	
git	ʃit	'tortilla'	
giŋ	ʃiŋ	'chili'	
giʃ	ʃiʃ	'net'	
(ŋ)gidʒ	(ŋ)ʃiʃ	'navel'	
gej	ʃej	'rain'	
geʃ	ʃetʃ	'thorn'	
get	ʃet	'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 tʃug	baŋ cuŋ	'animal'	
bitʃa'	pca'	'louse'	
bitʃuʃ	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)gidʒ	(ŋ)ʃiʃ	'navel'	

ru'	ru'	'mouth'	*r
reɲ	reɲ	'blood'	
biriz	briiz	'squirrel'	
urwi zi	urwi zi	'lemon'	
ʃun	tʃon	'three'	*tʃ
ʃigud	tʃigud	'cattle'	
ʃigɨɲ	tʃigɨɲ	'bird'	
biʃ	bitʃ	'rabbit'	
zeʃ	dzetʃ	'rough'	
ʎuʃ	ʎutʃ	'corn silk'	
kuʃ	kutʃ	'pig'	
zɨɲ	dʒɨɲ	'deer'	*dʒ
bizɨɹ	bdʒidʒ	'pineapple'	
bizɨɲ	bdʒɨɲ	'foam'	
bijeɹ	bjadʒ	'leafcutter ant'	
ʎuzɹ	ʎudʒ	'tongue'	
ju' weɹ	ju' wedʒ	'church'	
sa'	sa'	'party'	*s
sal	sal	'to wet'	
bisi	psi	'eagle'	
bisi'ɲ	psi'ɲ	'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'	
bizɨɲ	bzɨɲ	'mouse, rat'	
ʎez	lez	'possum'	
ɲez	nez	'road'	
biriz	briiz	'squirrel'	
ʃuɲ	ʃuɲ	'eight'	*ʃ
ʃig	ʃig	'pine cone'	
giʃ	ɲiʃ	'net'	
bitʃuʃ	pcuʃ	'tomato'	
uʒ	uʒ	'small, fine'	*ʒ
giʒ	ɲiʒ	'grass'	
laʒ	laʒ	'to end'	
keʒ	ceʒ	'cheese'	
mi'	mi'	'small'	*m
maʒ	maʒ	'tame'	
nap	nap	'good'	*n
nah	nak	'to be'	
nis	nis	'water'	
nidʒ	ɲiʒ	'milk'	
ʃun	tʃon	'three'	

na'n	na'n	'year'	
zan	zan	'opp.-sex sibling'	
ne	ne	'tail'	
uɲe	gunẽ	'scorpion'	
ɲedʒ	neɟ	'clothes'	
ɲez	nez	'road'	
na	na	'red'	*ɲ
na'n	na'n	'year'	
ʃuɲ	ʃuɲ	'eight'	
reɲ	reɲ	'blood'	
baɲ tʃug	baɲ cug	'animal'	
bisi'ɲ	psi'ɲ	'tile; shard'	
biziɲ	bziɲ	'mouse, rat'	
lola'	lola'	'Oaxaca'	*l
ladʒ	laɟ	'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	liɟ	'placenta'	
li	li	'straight'	
la	la	'bitter'	*ɬ
lag	lag	'leaf'	
luɖ	luɖʒ	'tongue'	
luʂ	lutʃ	'corn silk'	
mbaɬ	mbaɬ	'godfather'	
iɬ	iɬ	'big'	
waʂ	watʃ	'dry'	*w
ju' weɖ	ju' wedʒ	'church'	
urwi zi	urwi zi	'lemon'	
dʒaaw	ɟoow	'river'	
le'w	le'w	'zapote'	
ju' weɖ	ju' wedʒ	'church'	*j
bijah	bjak	'crow'	
bijeɖ	bjadʒ	'leafcutter ant'	
be'j	be'j	'mushroom'	
gej	ɟej	'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 OF SOUND CHANGE	EXAMPLE IN TEXMELUCAN ZAPOTEC	COGNATE IN ZANIZA ZAPOTEC
Loss of *i in initial syllables of certain disyllabic words (creates the context for the following change).	bgu	bigu
Devoicing of *b before voiceless consonants.	psi	bisi
Palatalization of *k before front vowels.	ceʒ	kez
Palatalization of *g before front vowels.	jit	git
Depalatalization of *c before front vowels.	ti'	tʃi'

SOUND CHANGES IN ZANIZA ZAPOTEC

DESCRIPTION OF SOUND CHANGE	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	ja
Fricativization of *tʃ.	ʃun	tʃon
Fricativization of *dʒ.	ʒɲ	dʒɲ
Palatalization of *n before /e/.	ɲez	nez
Palatalization of *l before front vowels.	ʎe'w	le'w