The background of the slide is a photograph of a mountainous landscape. In the foreground, there is a field of tall, green grass or reeds, some of which are slightly out of focus. In the background, there are several layers of mountain ranges, with the nearest ones being more detailed and the further ones appearing as hazy silhouettes. The sky is visible at the top, showing a soft, hazy light, possibly from a low sun or moon. The overall tone of the image is natural and serene.

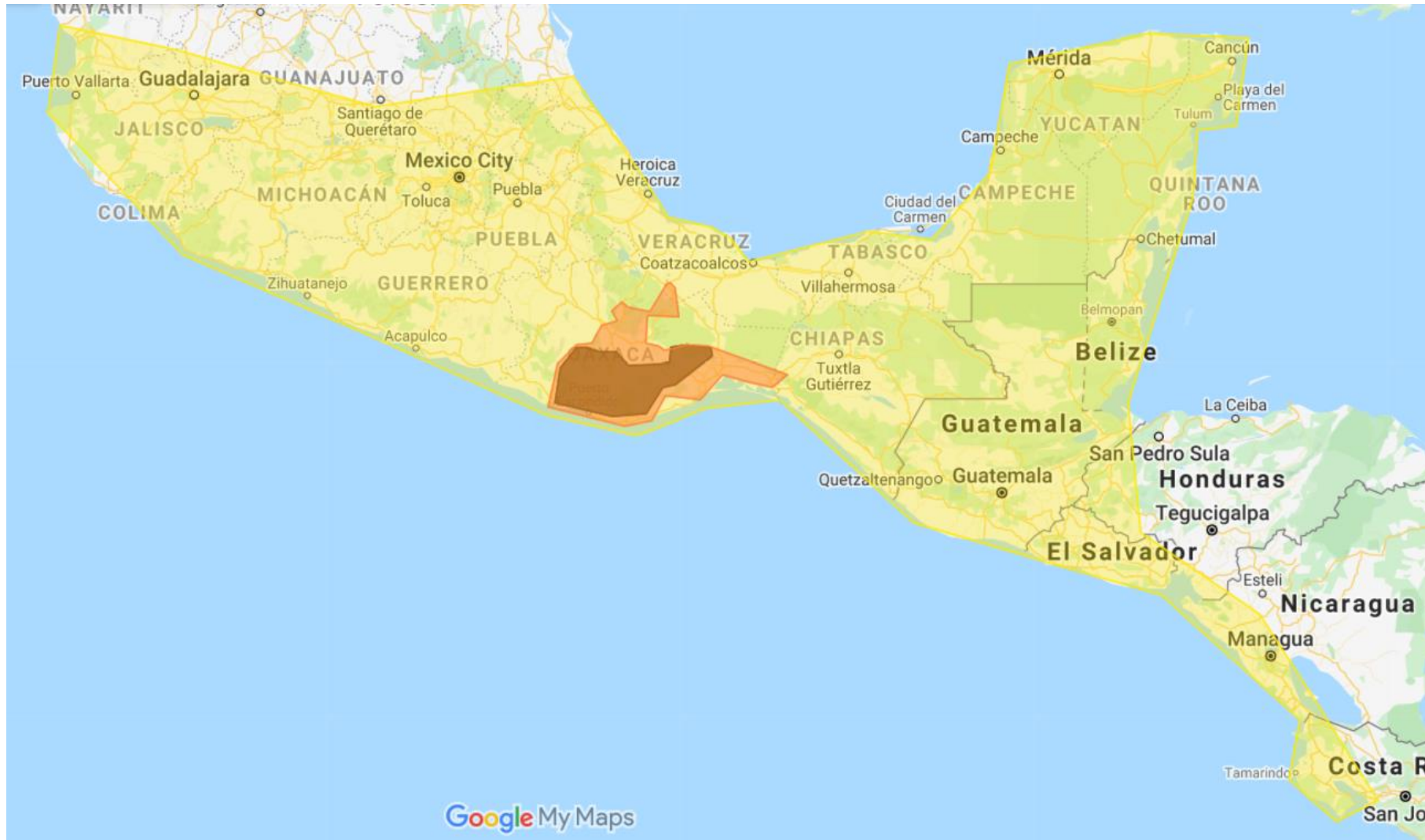
The role of migration in the creation of the Sierra Sur linguistic area: evidence from Zapotecan linguistics, archaeology and history

Rosemary G. Beam de Azcona, ENAH
L'aréalité linguistique à petite échelle:
questions de méthode

Campbell 2017:

A linguistic area, to the extent that the concept may be of any value, **is merely the sum of borrowings among individual languages** in contact situations. If we abandon the search for an adequate geographically oriented definition of the concept and for criteria for establishing linguistic areas, and instead **focus on understanding the borrowings**, those contingent historical facts and the difficulty of determining what qualifies as a legitimate linguistic area cease to be problems.

Small scale areal linguistics: the Sierra Sur inside the Zapotecan family inside Mesoamerica

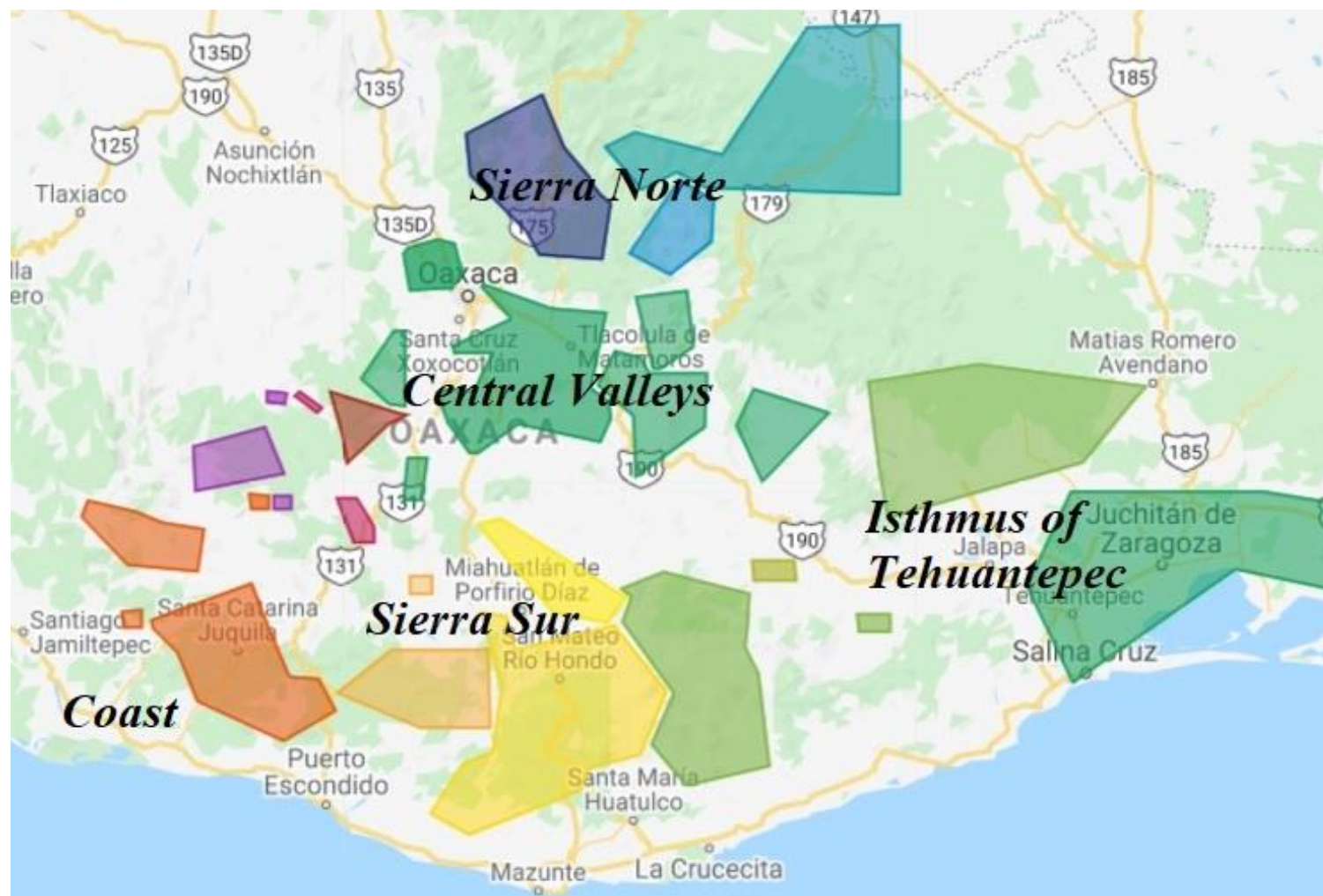


I use ethnohistorical and archaeological sources to

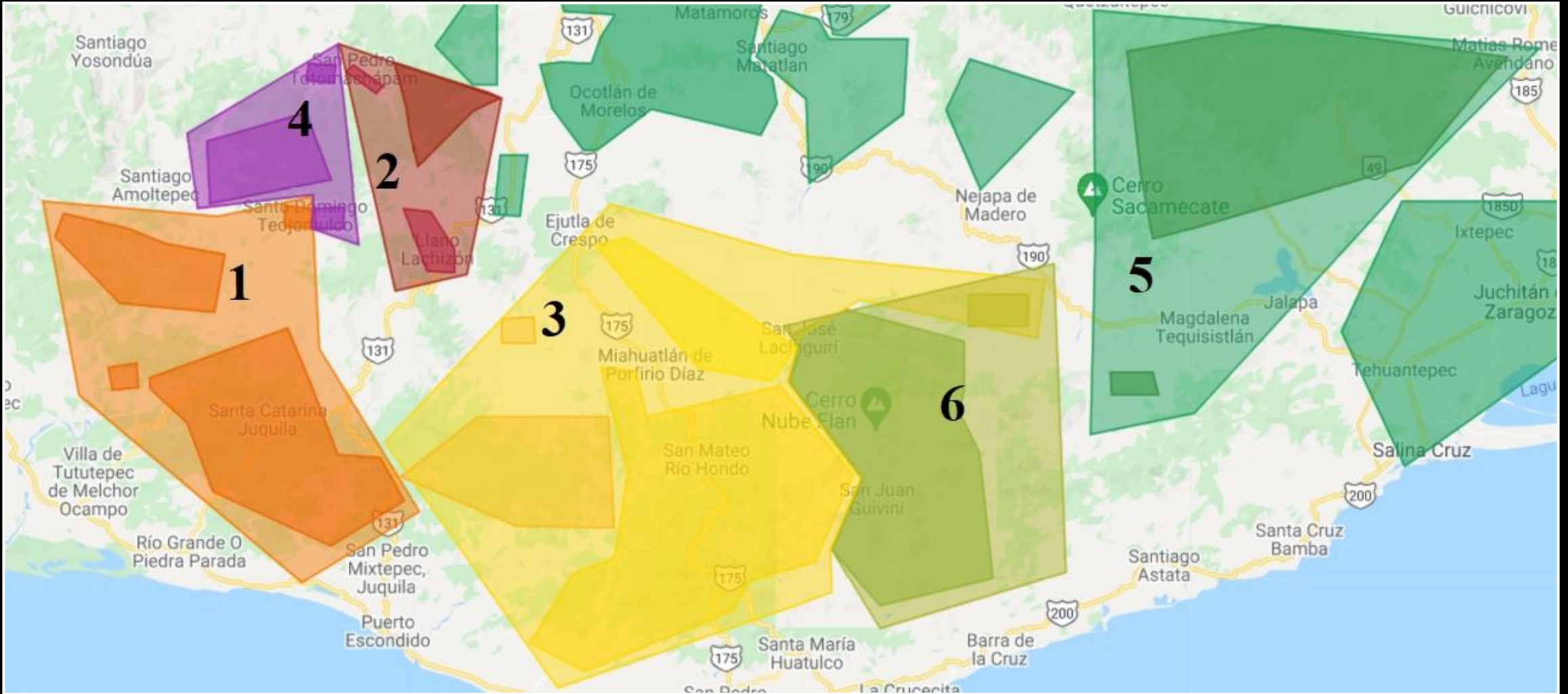
- Generate social hypotheses that might help me understand patterns of diffusion
- To tentatively date linguistic innovations since our discipline arguably lacks a reliable method of dating the changes we study

The dangers of interdisciplinary research

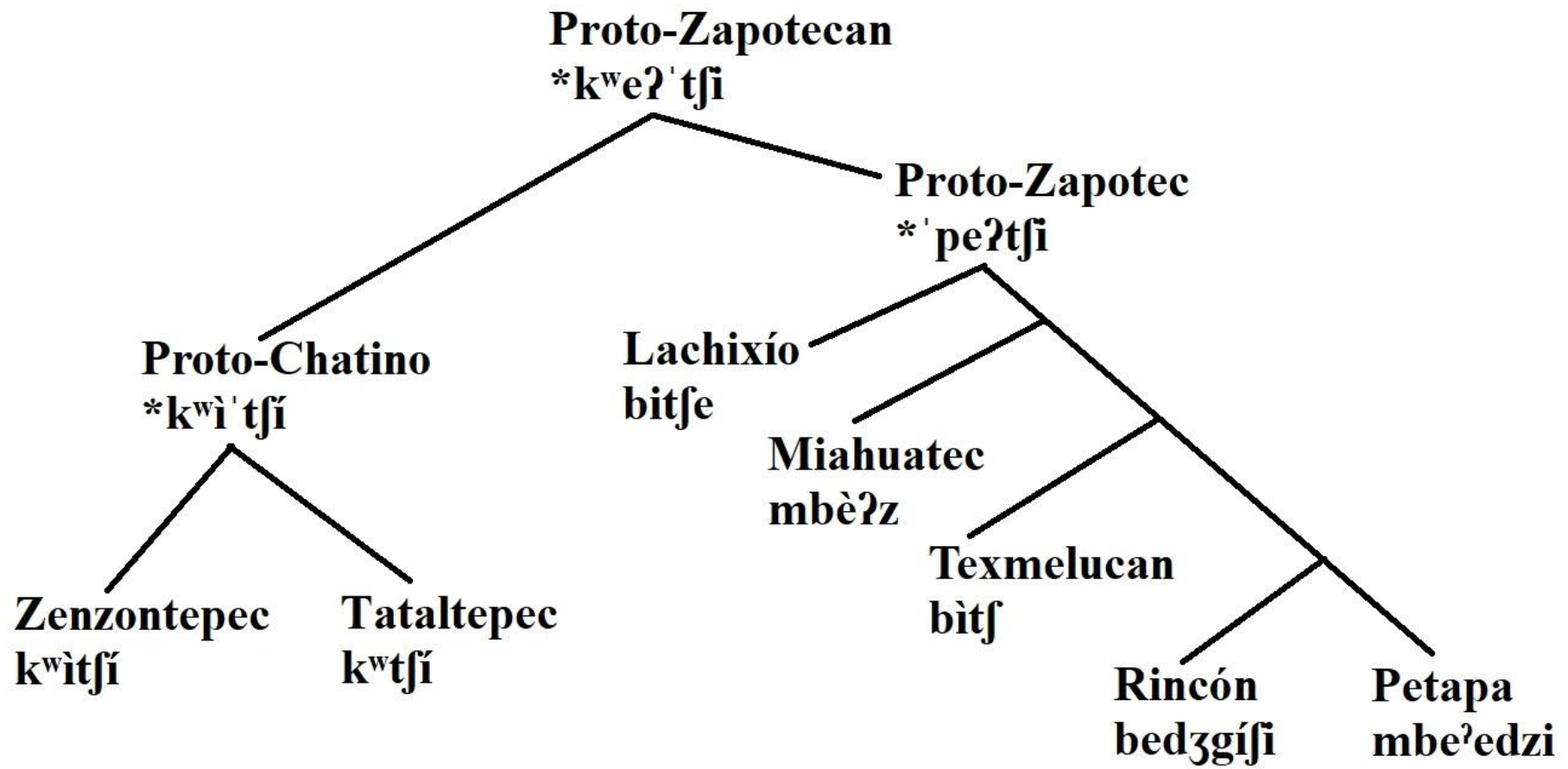
- “**Glottochronological** and archaeological evidence suggests that by the Early Formative it is likely that the Mixtecan and Zapotecan language groups had diverged” (Joyce 2010:64)
- Referring to some of the Zapotec communities in the Loxicha region where I have done linguistic research, Lind (2015:287) writes:
“Although Carrasco and Weitlaner et al. refer to these communities as Zapotec, **their vocabulary items**, especially with regard to the deities, **are so different from Zapotec terms as to suggest that these communities may be Chatino**, close relatives of the Zapotecs.”



Zapotecan
regions of
Oaxaca,
Mexico



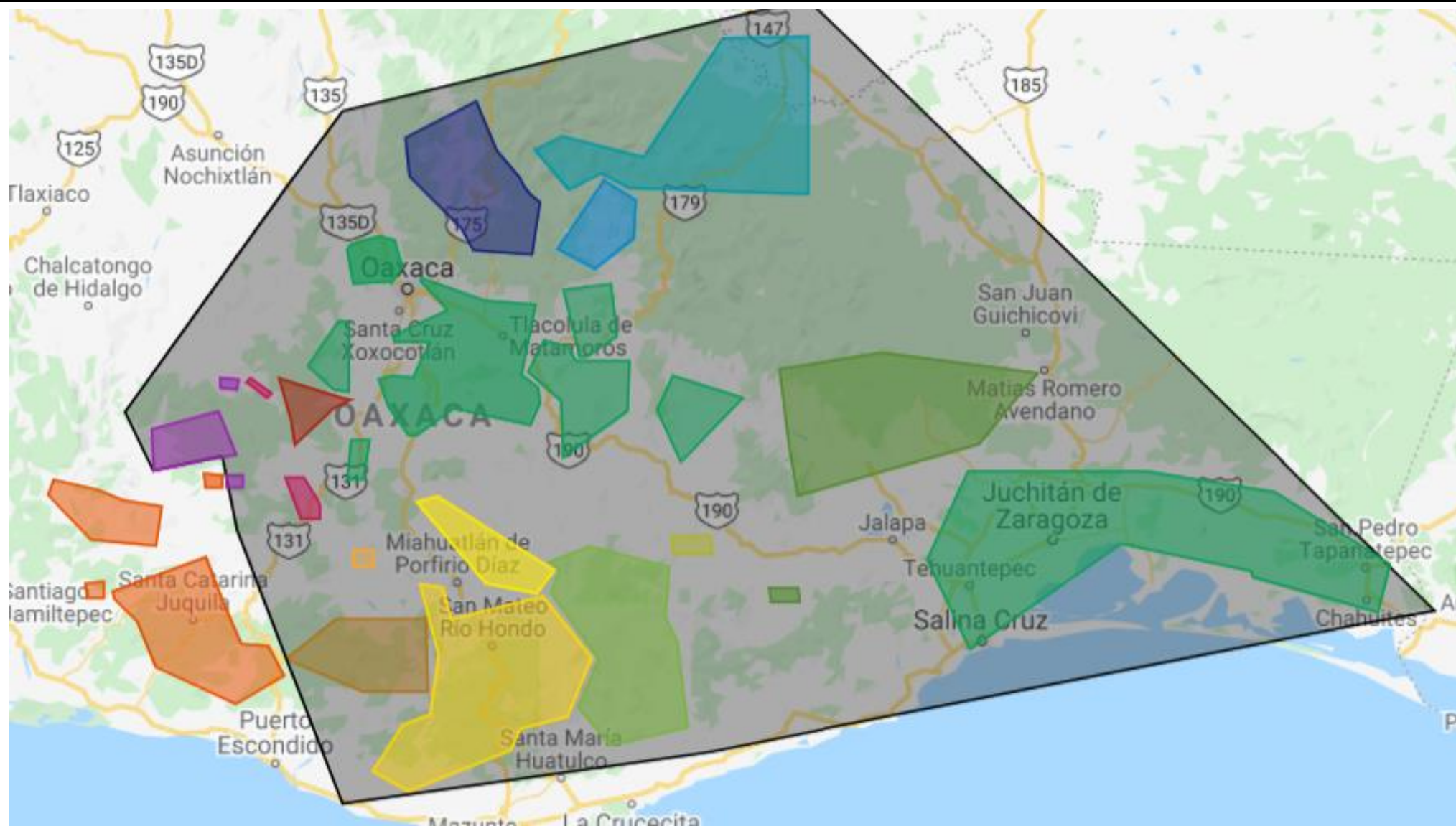
Zapotecan migrations to the Sierra Sur linguistic area



‘puma’

- Proto-Zapotecan > Proto-Zapotec
- 1. *kʷ > *p in pre-tonic syllables
- 2. CV'CV > 'CVCV

Zapotecan languages with bilabial obstruents



Archaeological evidence for possible Zapotecan presence

Coast (Lower Río Verde Valley)

La Consentida yielded a radio-carbon date of 1530 BCE (Joyce 2010:72) in the Early Formative.

1530 BCE

700-400 BCE

Population in the Río Verde increased 1200% from the Early to the Middle Formative “Charco phase” (700-400 BCE) (Joyce 2010:180)

Central Valleys

Flannery & Marcus (1994:375) date the Espiridión complex in the Valley of Etla to between 1900-1400 BCE based on ceramics (Joyce 2010:71)

1900-1400 BCE

500 BCE

The city of Monte Albán was founded ca. 500 BCE (Joyce 2010:128)

By 400 BCE Chatinos and Zapotecs lived apart

Evidence

- Linguistics:
 - The division between Zapotec and Chatino is the oldest in the Zapotecan family
 - Chatino languages are spoken in and near Oaxaca's western coast
- Archaeology:
 - Earliest sedentary coastal community is 1530 BCE
 - Significant population increase between 700-400 BCE

Hypotheses

- Hypothesis A: Proto-Zapotecan speakers were nomadic or semi-sedentary and the onset of sedentism in the Early Formative resulted in the Chatino-Zapotec division.
- Hypothesis B: La Consentida was a non-Chatino population. The Chatinos' arrival was contemporaneous with the foundation of Monte Albán.
- Hypothesis C: There was an early, small Zapotecan coastal presence which increased at the founding of Monte Albán.

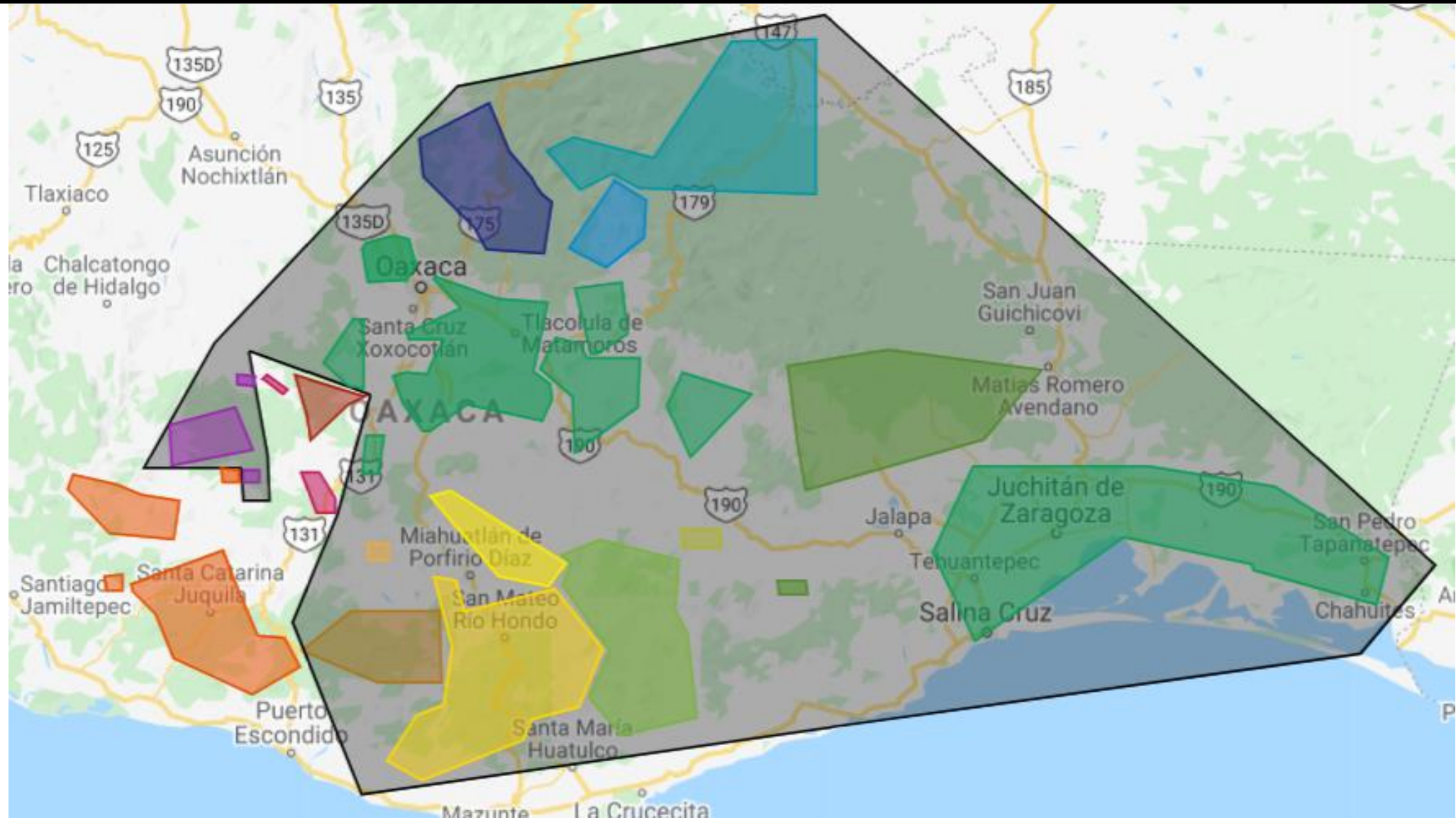
- The Chatino migration results in the division of the Proto-Zapotecan speech community into two.
- Sound changes in the Central Valleys transform the Proto-Zapotecan spoken there into Proto-Zapotec.



The internal diversification of Zapotec

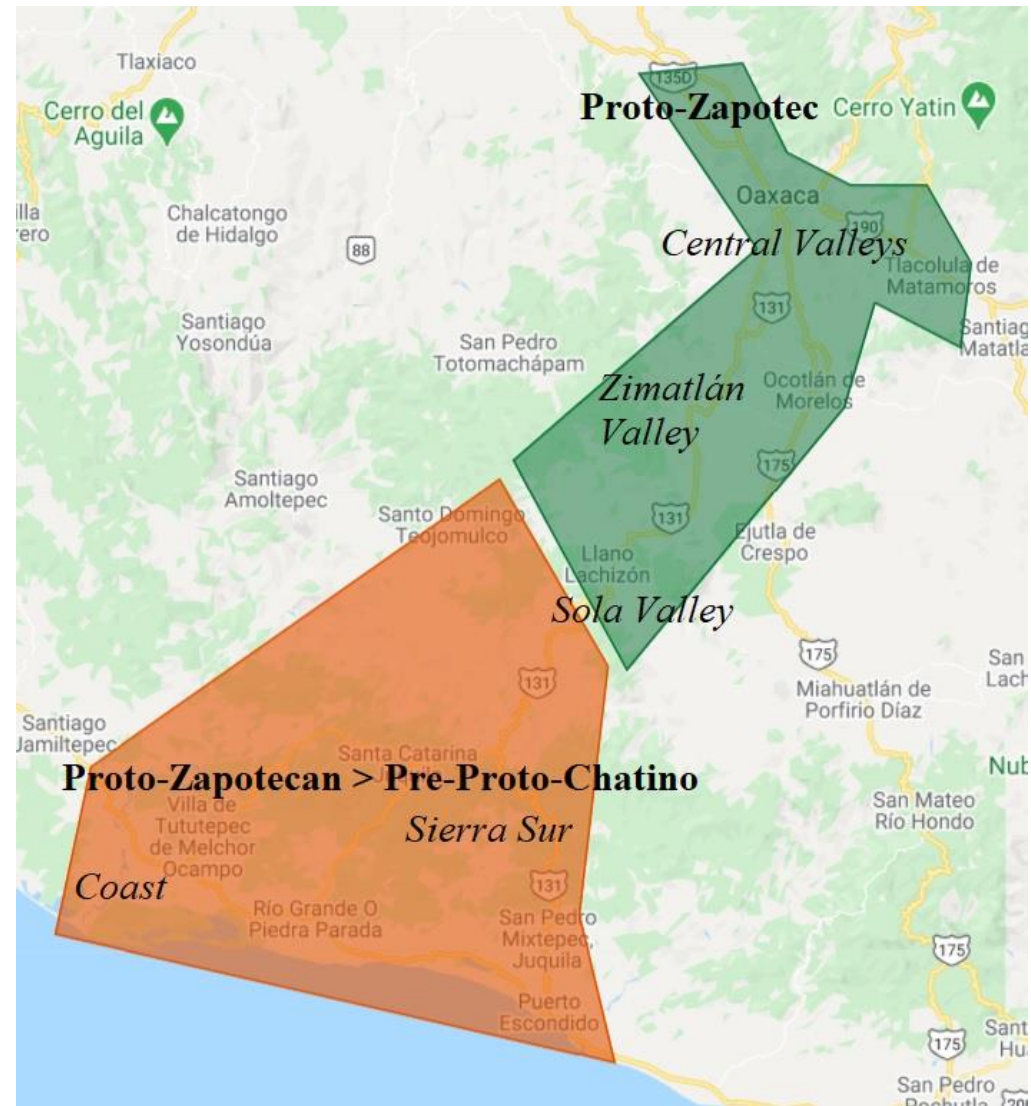
Gloss	Proto-Zapotecan	Zenzontepec Chatino	Soltec	Totomachapan	San Mateo Mixtepec	Colonial Valley Zapotec
'meat'	*k ^w eʔnãʔ	k ^w enãʔ	<i>bená</i>	baʌ·ɛ	βél·à	<i>bèla</i>
'corn grains'	*Cok ^w aʔ	ntsuk ^w aʔ	<i>yoco</i>	ʃuku	ʒuk ^w aʔ	<i>xooba</i>
'feather'	*ttʰokk ^w a	tuk ^w a	<i>toco</i>	tʃuku	tuk ^w a	<i>topa</i>

Post-tonic develarization



Based on Linguistics:

We can hypothesize that the first “Zapotec” southern migration is to the Sola Valley for the purposes of trade with the Chatinos. Post-tonic develarization must have taken place after colonization of the Sola Valley.



What does archaeology say?

Sola Valley

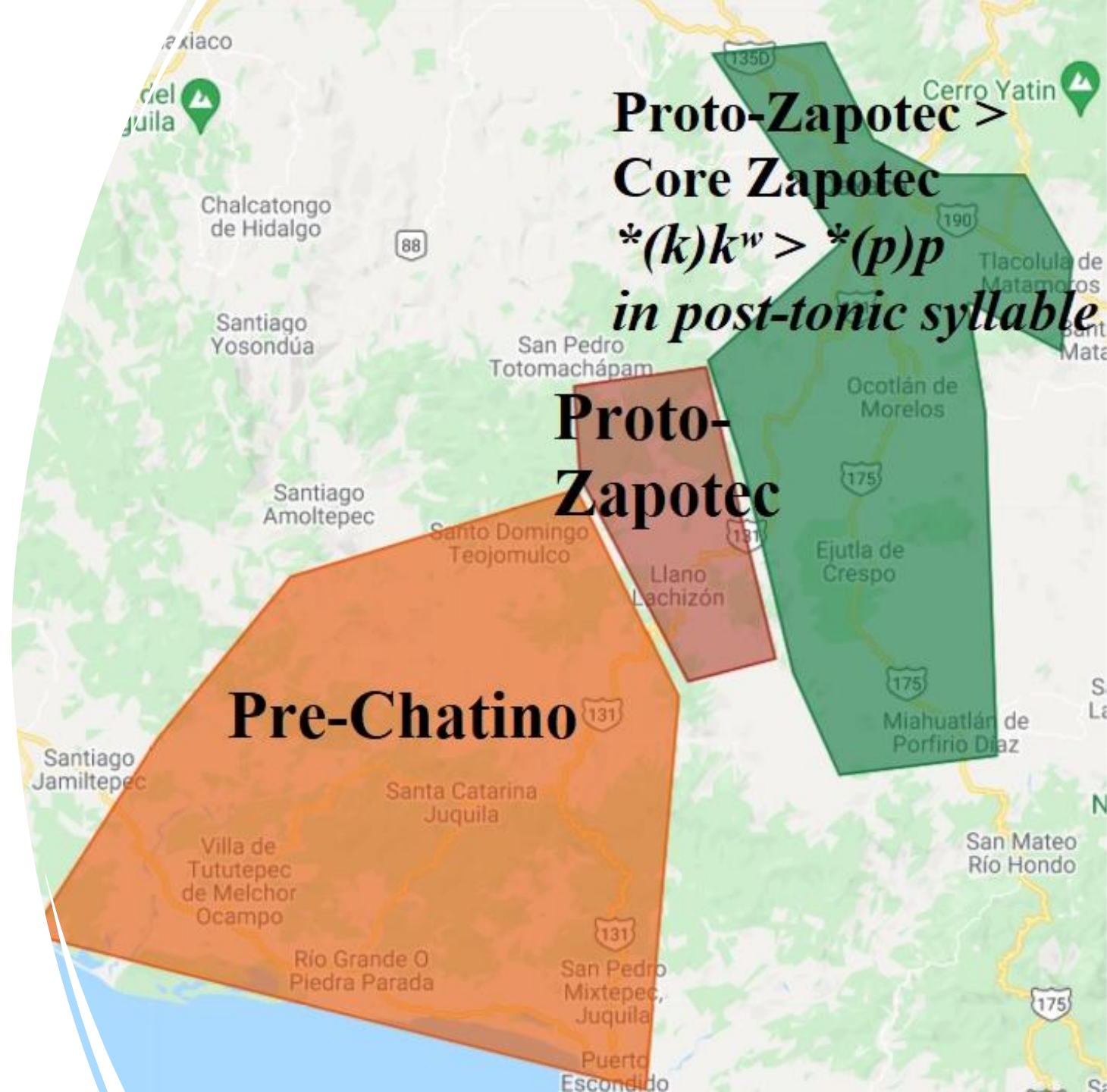
- Balkansky (2002:37, 85-86) dates the colonization of the Sola Valley to the century **300-200 BCE**.

Ejutla & Miahuatlán Valley

- While earlier small settlements exist in Ejutla (Feinman & Nicholas 2013:183), large scale settlement in the Ejutla and Miahuatlán Valleys begins in the Late Formative (**400-100 BCE**, cf. Markman 1981; Badillo 2019:35),

Archaeology as reality check

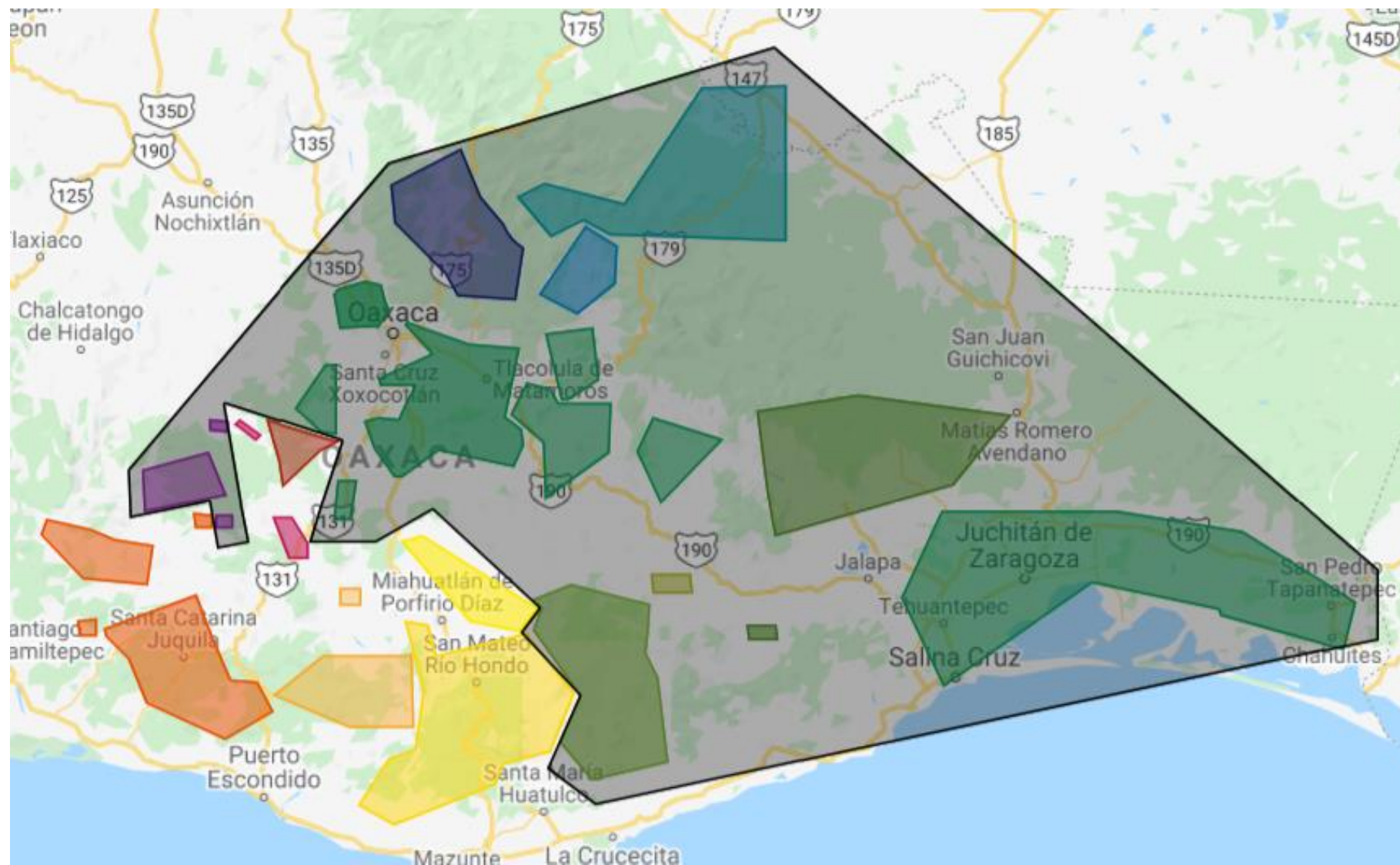
- Adoption of post-tonic develarization may be based more on social factors than on geographic proximity or chronology of migration



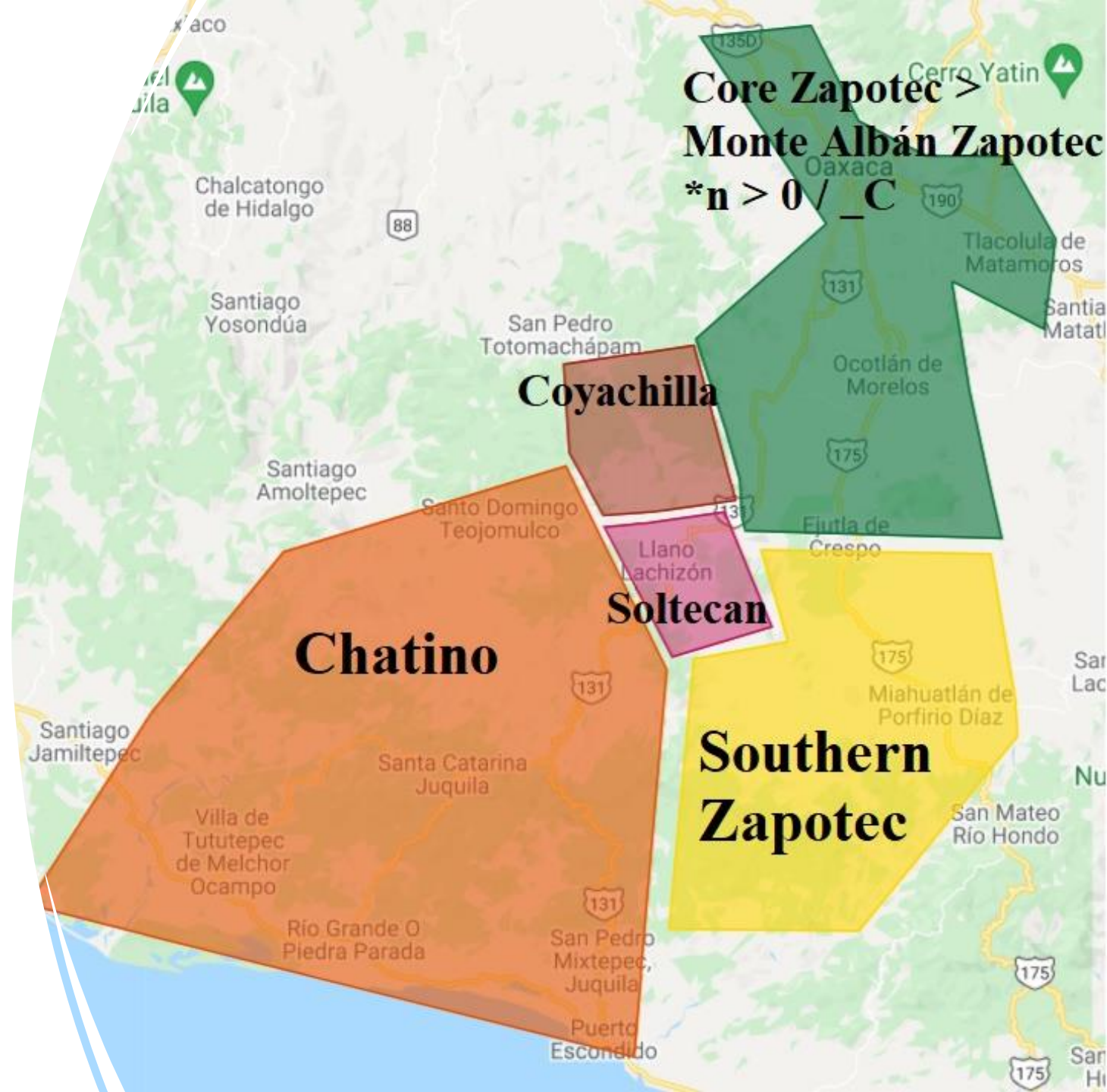
Preconsonantal nasal deletion

	STA-lie.down	STA-sit	STA-stand
Zenzontepec	l-asija	n-tuk ^w a	n-duku
Totomachapan	n-afu	n-duku	n-du
Lachixío	n-oʂo	n-zoko	n-zu
Miahuatec	n-àʃ	n-dób	n-do+li
Rincón		ʒo	zò
Texmelucan	n-aʃ	zub	zu
Tlacolulita	n-áʃ		zó

Languages which delete preconsonantal nasals



Preconsonantal nasal deletion

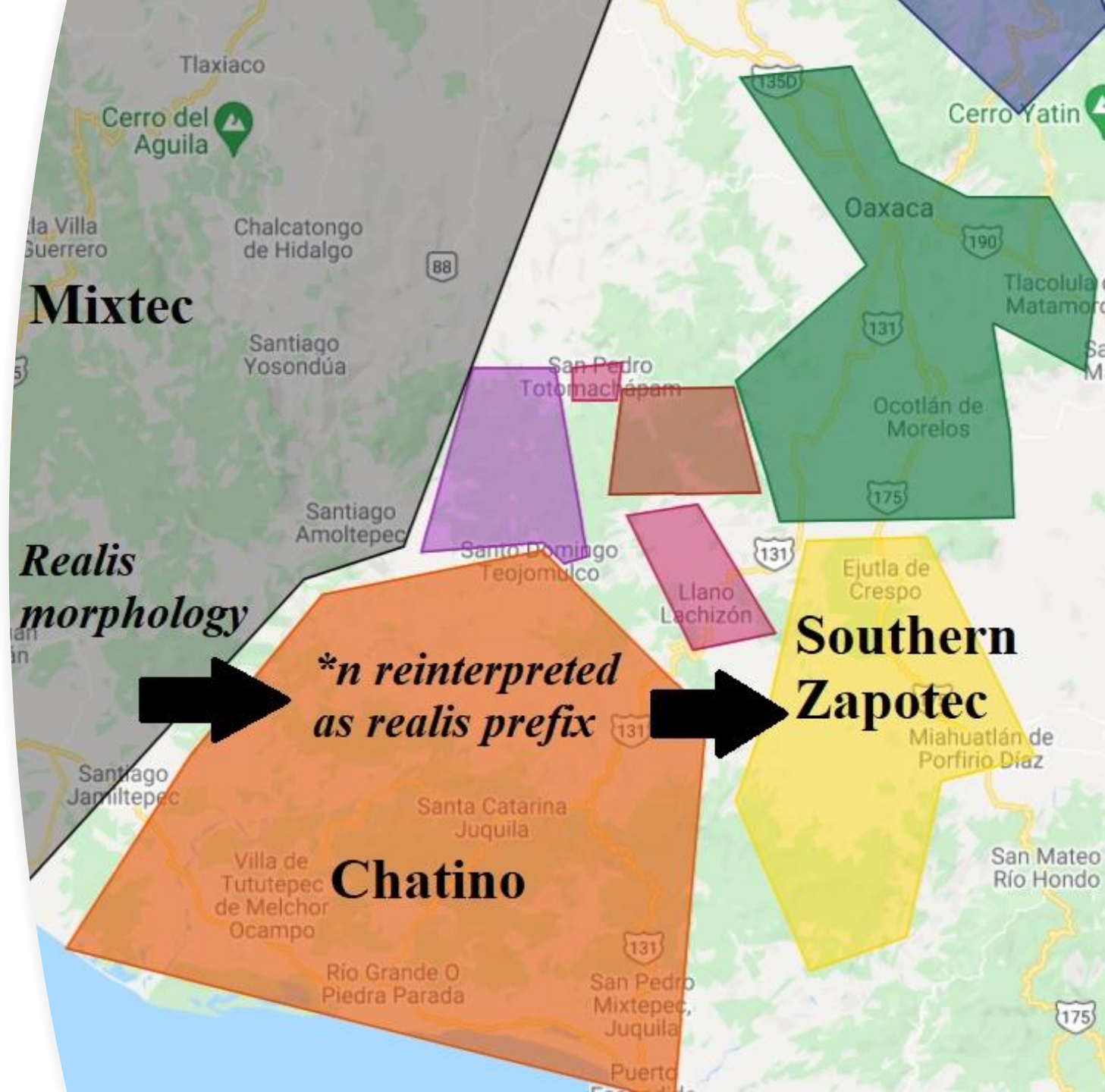


In addition to retention, Chatino influence is seen in diffused traits such as the realis prefix

'walk'	Zenzontepec Chatino	Miahuatec (Southern) Zapotec
Habitual	ṇ -ḍaʔã	n -djæ̀
Perfective	ṇ -gu-taʔã	m -b-dæ̀
Imperative	ku-taʔã	b-dæ̀
Potential	tʲaʔã	djæ̌

Innovation and diffusion of realis N-

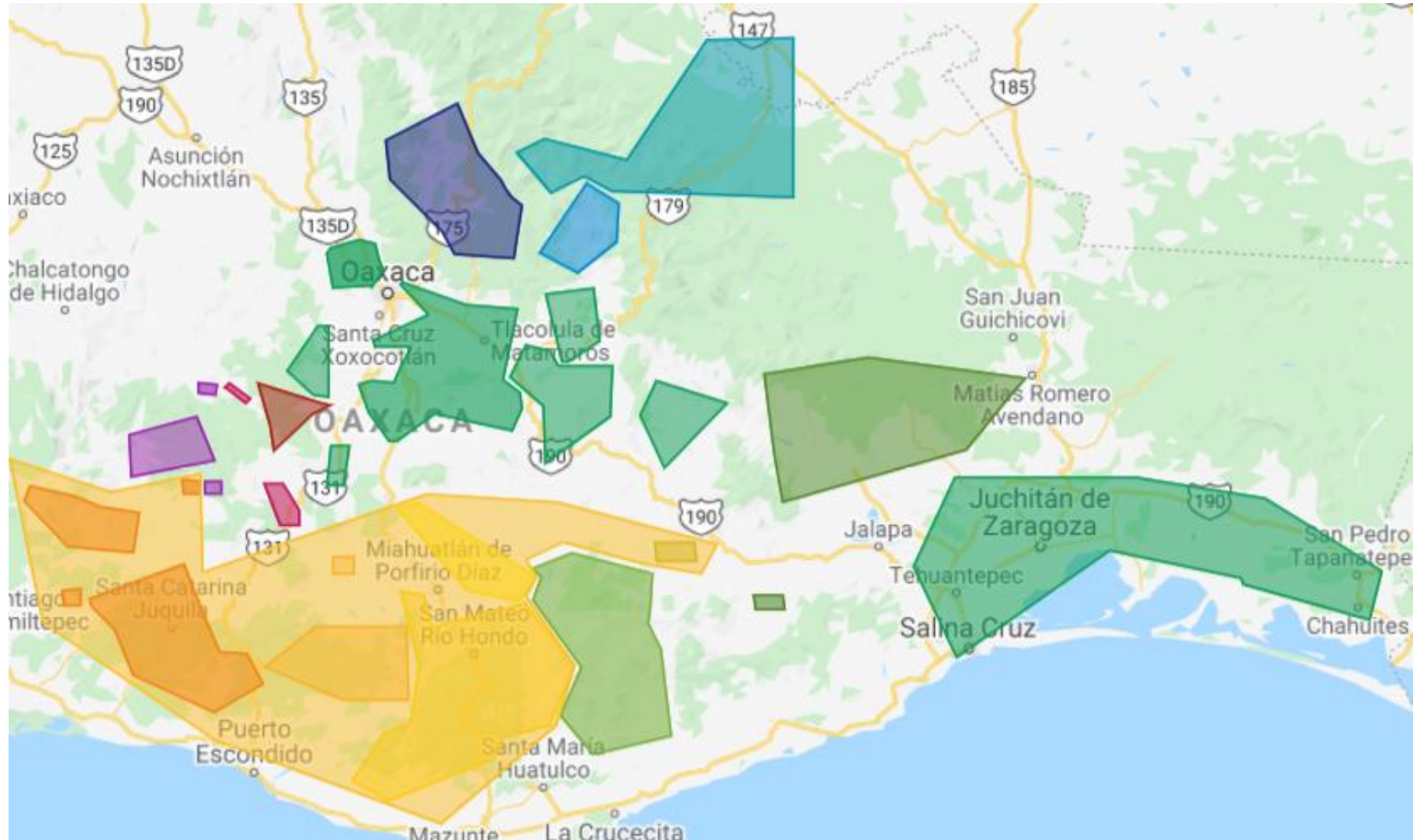
- The realis prefix N- is diffused between **Chatino** and **Southern Zapotec**. It occurs in no other Zapotecan languages, though its development may be related to the stative-marked completive forms in Coyachilla shown earlier.
- Possibly the grammaticalization of N- as a realis prefix could be related to contact with the **Coastal Mixtec** of the Tututepec empire.

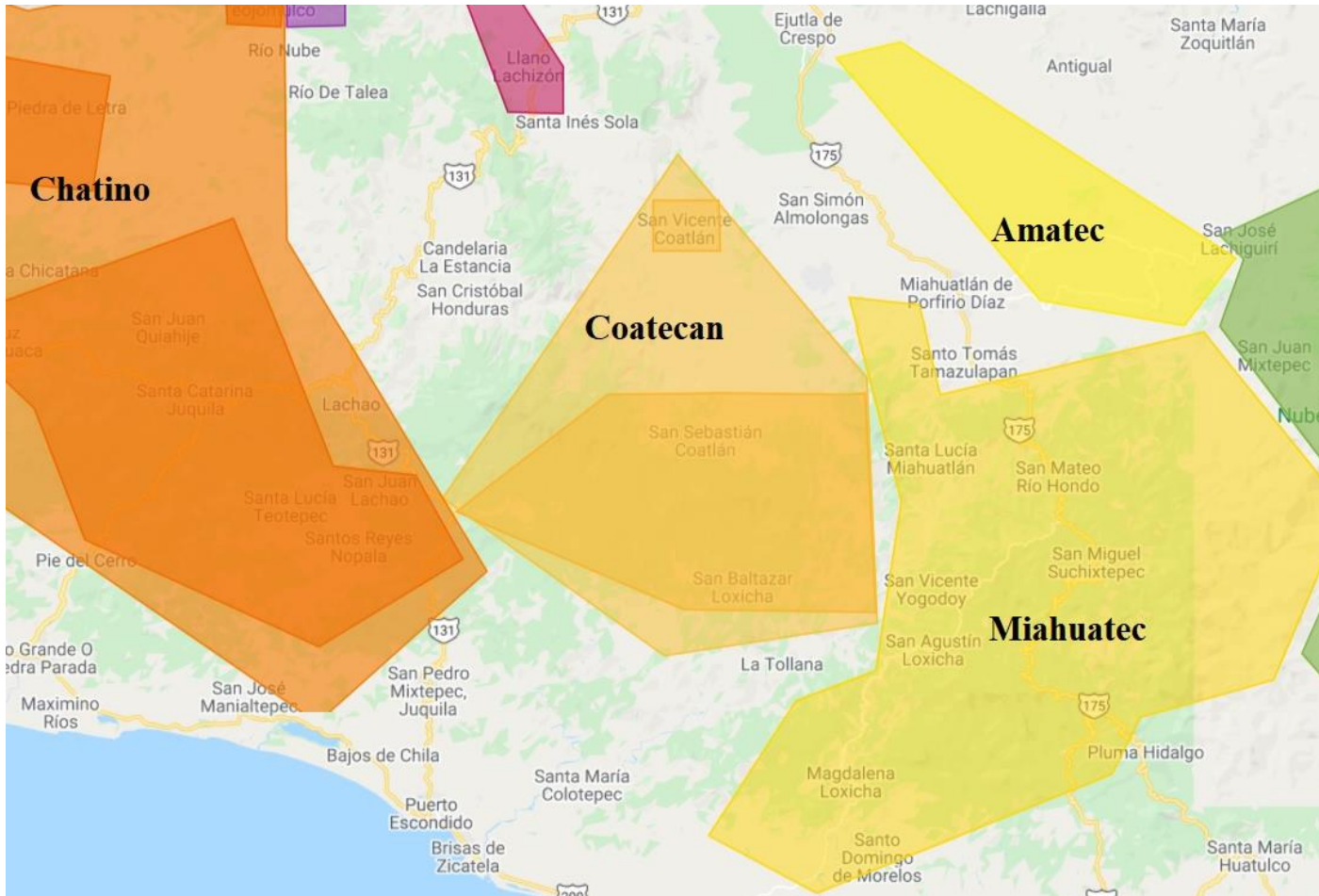


How plausible is it that the realis category diffused from Mixtec and when could it have happened?

- Linguistic evidence
 - Mixtec is spoken on the Coast, adjacent to Chatino around Tututepec.
 - One community is **bilingual** in Coastal Mixtec and Zenzontepec Chatino (E. Cruz 2011:19)
 - **Lexical** borrowings from Coastal Mixtec into Zenzontepec, Tataltepec and the Zacatepec variety of Eastern Chatino (E. Campbell 2013:415, 2014:64)
 - **Morphosyntactic** borrowings from Coastal Mixtec into Tataltepec Chatino (Sullivant 2015)
- (Ethno-)historical evidence
 - At the time of the Spanish invasion, Chatino and some Southern Zapotec communities were subject to the Tututepec empire.
 - Mixtec codices pertaining to Lord 8 Deer put his expansion to a new territory often interpreted as Tututepec (e.g. Joyce et al. 2004) at 1083 CE. However, some experts privately express doubts about the location of Lord 8 Deer's expansion.
- Archaeological evidence
 - The earliest radiocarbon dates for the Tututepec site fall in the range of 1291-1405 and 1298-1372 CE (Levine 2011:31, 36).

Chatino and Southern Zapotec are the only Zapotecan languages with a realis prefix





- Diffusion of the realis prefix differentiates Southern Zapotec from the rest of Zapotec
- Within Southern Zapotec Coatecan shows the most influence from Chatino, followed by Miahuatecan and then Amatec
- Western varieties of Miahuatec show more influence from Chatino and/or Coatec than eastern varieties

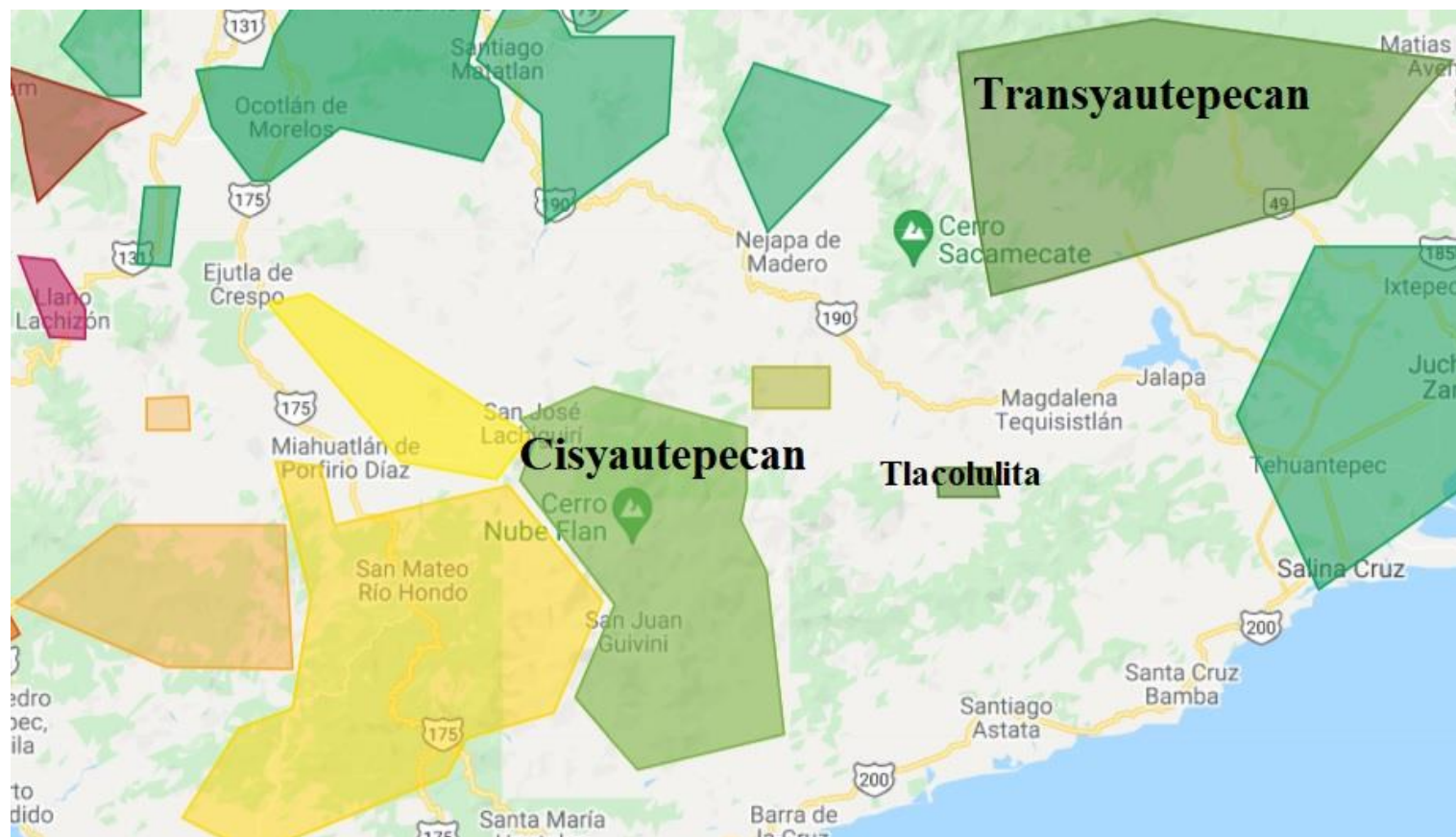
Some basic vocabulary is borrowed into Coatec from Chatino

	Zenzontepec Chatino	Coatec	Miahuatec	Amatec
‘house’	nĩʔi	nì	jó	jóʔ
‘wing’	luʔwe	lwê	ʃíʔl	ʃíʔl
‘tail’	hniʔi	ʃnè	ʃnè	ʃbaʔn
‘back’	itsõʔ	tsoʔ	dìts	tìtʃ

Coatecan & Chatino

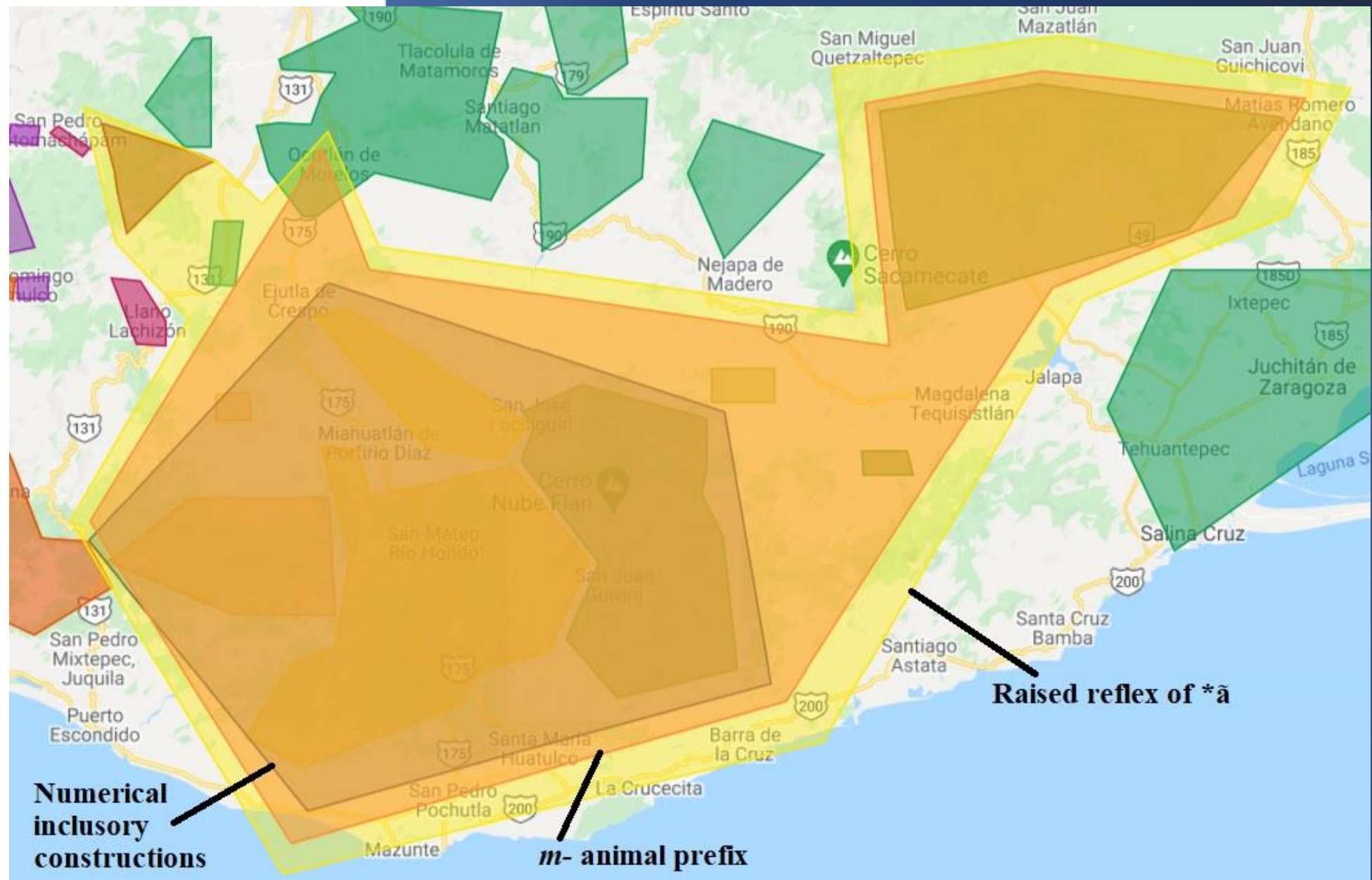
- Coatec phonological traits perhaps akin to a Chatino accent
 - Depalatalized reflexes of $*(t)t^j$
 - Fricative reflexes of final $*(t)t$
 - Some mergers of $*C$ and $*CC$
- Chatino morphological traits in Coatec
 - Chatino perfective forms are used as stative participles in Coatec
 - Coatec has progressive morphology borrowed from Chatino
 - Coatec has palatalization in the potential and habitual forms of a particular verb class, as in Chatino

Smith Stark (2007) classified Cisyautepecan and Tlacolulita as Southern Zapotec, and had considered including Transyautepecan as well.



Transyautepecan, Tlacolulita & Cisyatepecan share an m- prefix derived from a class term ‘animal’, which marks animal names, with Southern Zapotec

	Coatec	Cisyatepecan	Tlacolulita	Transyautepecan	Isthmus Zapotec
‘mouse’	mbzìn	mzin	bisín	mbizí ^h na	bizina
‘deer’	mbzîn	mdzìn	mbizìn	mbizìna	bidzina
‘dog’	mbèk	mæk ^w	mbàk ^w	mbà ^h ku	biʔku
‘armadillo’	mbgùp	mgup	mbigup	ɲgupi	ɲgupi



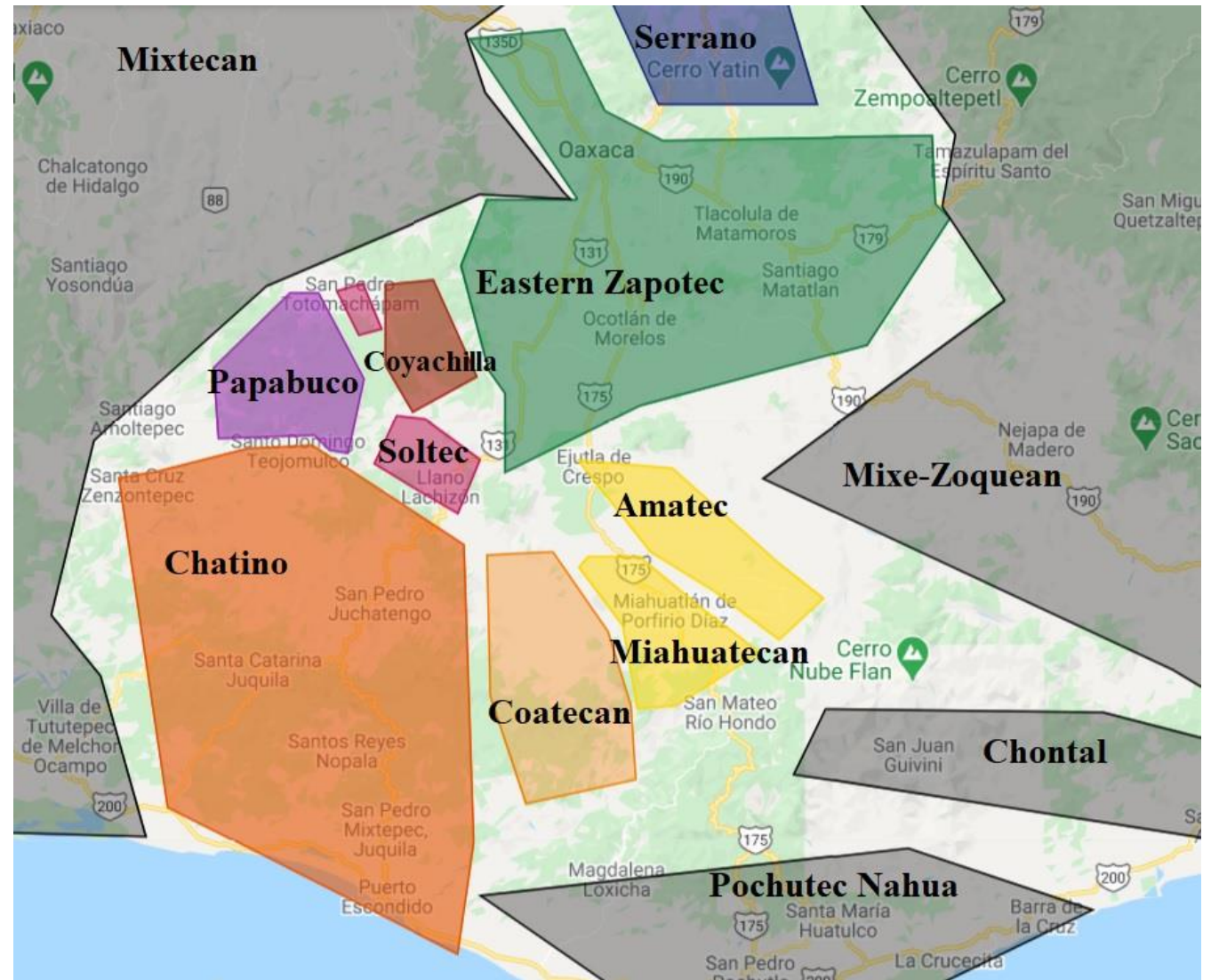
Nevertheless, Cisyautepecan, Tlacolulita & Transyautepecan pattern with Central Zapotec

- Animacy prefix *pe- extended to many plant terms
- Preconsonantal nasal deletion
- Lexical isoglosses
- Retention of geminate/singleton contrast among sonorants and sibilants (except in Tlacolulita)
- Lack of realis marking
- Increased number of phonation contrasts (except Tlacolulita)
- Independent pronouns with the base *lã?
- And more...

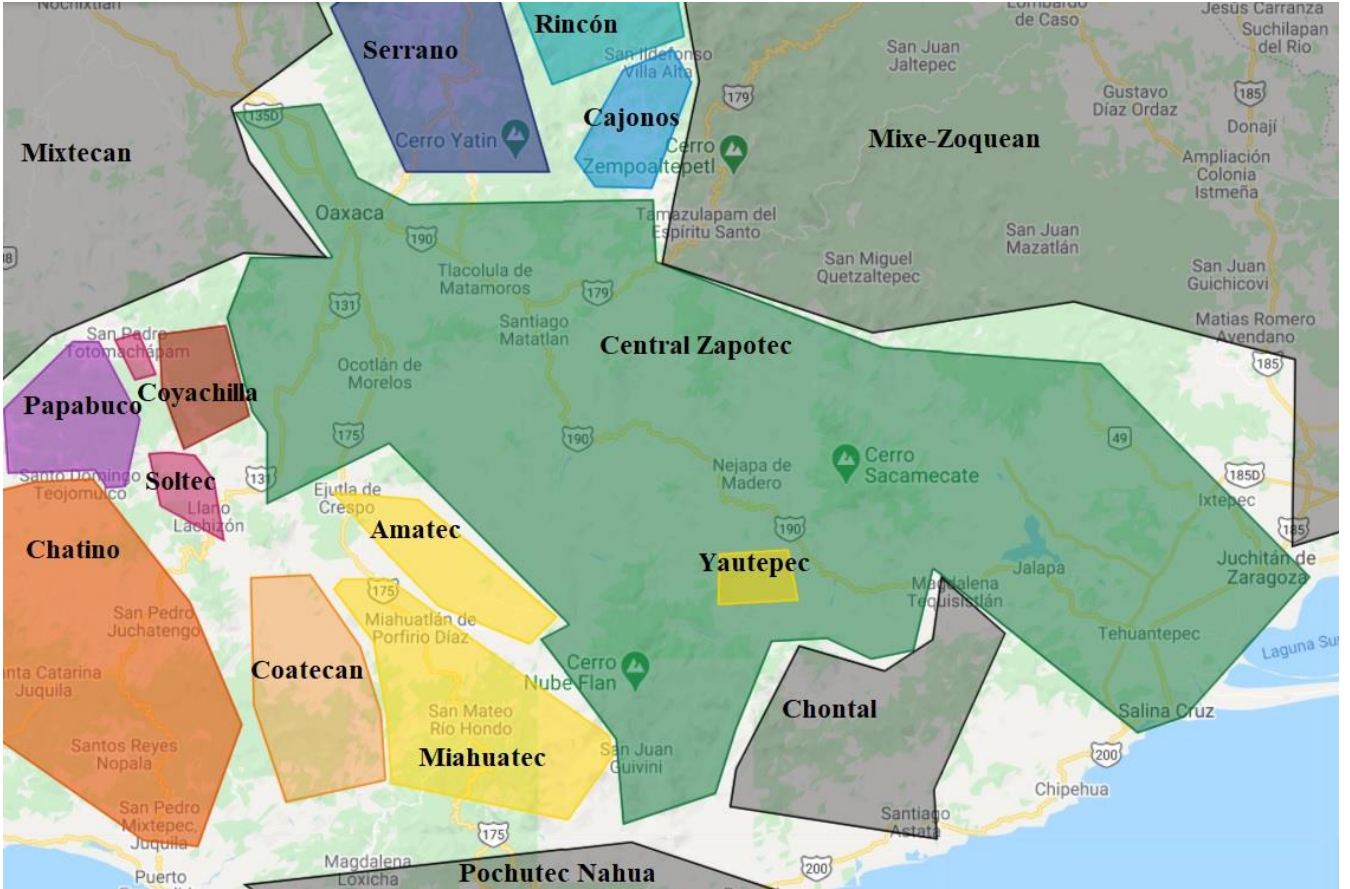
Based on linguistic evidence:

Cisyautepecan, Tlacolulita and Transyautepecan result from late migrations out of the Central Valleys











Hypothetical
linguistic
geography ca.
1300CE,
based on
historical and
epigraphic
evidence



Hypothetical locations ca. 1500CE



Urcid (1993)
correlates
glyphs found
on the coast
with Zapotec
writing from
the Central
Valleys and
dates them
stylistically to
600-900 CE

Coast	Glyph	Central Valleys
 1	167	 14
 2	K	 15
 3	M	 16
 4	"leaf"	 17
 5	"hill"	 18

The easternmost example of the Coastal Zapotecan inscriptions was found around Pochutla

- “The absence of monuments and lack of epigraphic data from the eastern littoral might reflect the maximum eastern coastal extent of the Zapotecan languages in antiquity.” Urcid (1993:162)



Transyautepecan & Tlacolulita

Tlacolulita

- kʲa^ht ‘tortilla’
- ,kʲaðe'riʔ ‘esta tortilla’
- ,kʲaðe'naʔk ‘tortilla de ayer’

Transyautepecan (Santa María Petapa)

- 'gæ^htæ ‘tortilla’
- ,gædæ'ræʔ ‘esta tortilla’
- ,gædæ 'naʔaga ‘tortilla de ayer’

Colonial era (1521-1821 CE) paintings record Zapotec migrations and genealogies. Oudijk (2008) uses a formula of 23.5 years per generation to date past migrations

Pintura de San Andrés Mixtepec

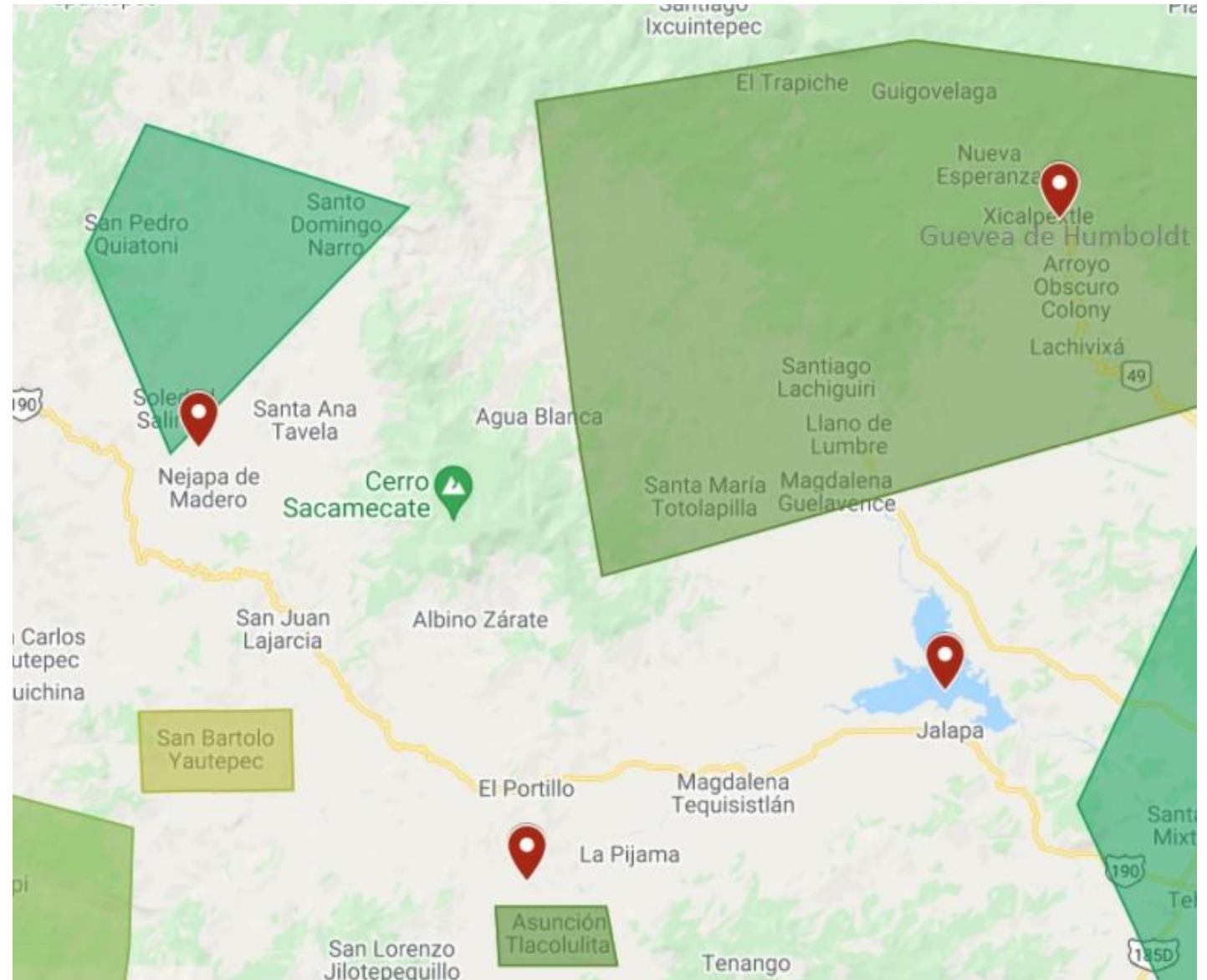


Lienzo de Guevea



Transyautepecan & Tlacolulita

- Ca. 1370 CE Cosijoeza I of Zaachila institutes expansionist policies, including to the Valley of Nejapa, from whence there was a subsequent expansion to Guevea and Jalapa (Oudijk 2008 & p.c.; Oudijk & Jansen 2000)



Hypotheses about the partially shared history of Tlacolulita and Transyautepecan based on:

Linguistic evidence

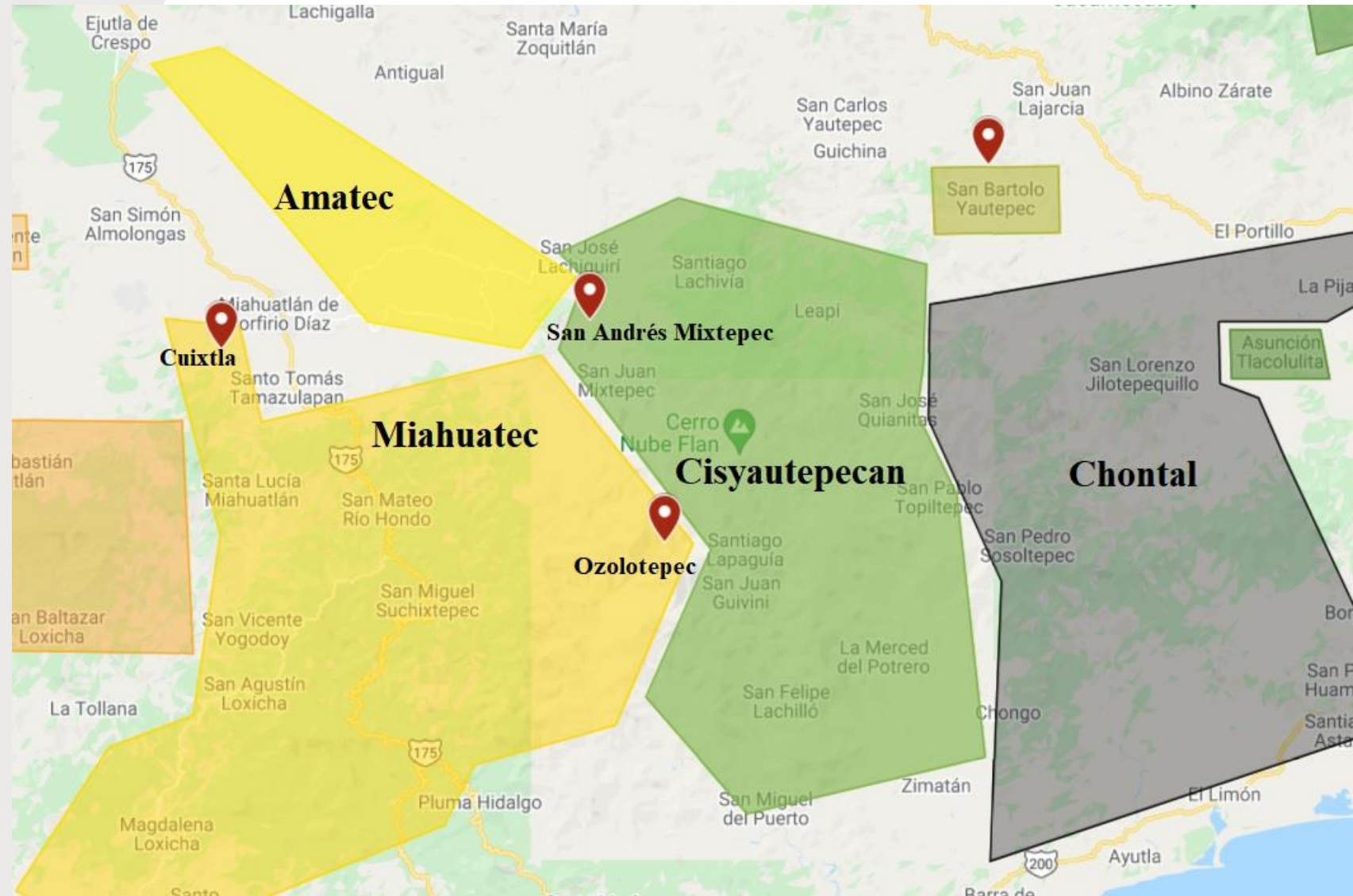
- **Uniquely shared feature:**
 - Transyautepecan and Tlacolulita both have lenition in noun phrases
- **Common shared features with particular Central Valley varieties:**
 - They share a 1sg prefix dV- with varieties of the Tlacolula Valley
- **Features shared between Transyautepecan and certain central Valley varieties but not Tlacolulita:**
 - Transyautepecan has phonation contrasts like those of the western Tlacolula Valley

Ethnohistorical evidence

- Population movement from Central Valleys to Nejapa in the late fourteenth century
- Colonists likely came from multiple Central Valley communities
- Expansion to Guevea and Jalapa may have taken place some 30 years after colonization of Nejapa

Cisyautepecan is a Central Zapotec dialect continuum located in the Sierra Sur

- Ca. 1450 there is a dynastic crisis in Zaachila. This prompts the establishment of a royal court in exile in Tehuantepec.
- The Pintura de San Andrés Mixtepec records a migration of a royal family from Zaachila ca. 1403-1474
- They stay in Cuixtla for one generation, before founding San Andrés Mixtepec ca. 1426-1497
- The *relaciones geográficas* record a Miahuatec conquest of Chontal-occupied Ozolotepec ca. 1450.



The Yautepec word for ‘palm tree’ looks like hypercorrection, something that could happen if the town were founded by a mixed group of settlers which included central Zapotec speakers who shifted to Miahuatec.

	Proto-Zapotecan	Miahuatec	Córdova	San Bartolo Yautepec
‘grease’	*tsã:	dă	<i>zàa</i> //sa://	dăé
‘salt’	*tsete?	dèd	<i>cete</i> //sete//	dèd
‘palm tree’	*kinã (Proto Monte Albán Zapotec *tsinã)	gĩn	<i>yagaciña</i> //jaga + sijn//	dín

Main points:

The risk of interdisciplinary research is basing hypotheses on misunderstandings.

An interdisciplinary approach offers opportunities for testing hypotheses and generating new ones.

Within linguistics no method for dating linguistic change is widely accepted.

Archaeology has radiocarbon dating, dendrochronology, and the phasing of ceramics.

Historical documents may include dates or a number of generations elapsed between historical events.

The Sierra Sur “linguistic area”

Is a network of 20 contiguous Zapotecan languages formed by six migrations over two thousand years.

Diffusion takes place between currently or formerly adjacent languages.

Some diffusion is between intelligible varieties

Some diffusion, such as Mixtec > Chatino realis morphology, requires bilingualism.

San Bartolo Yautepec and Coatecan languages show evidence of dialect mixing and/or language shift.

The Sierra Sur

Is characterized by greater nasality due to

- Retention of preconsonantal nasals
- Retention & innovation of vowel nasalization
- Diffusion of the realis prefix *n-*
- Diffusion of the classificatory prefix *m-*

No one language has all of these features

This areal trait may be due to the prestige of the “founder effect” afforded to the earliest settlers.

References cited

- Anonymous. 1609. *Relacion del pueblo de Ocelotepeque*.
- Badillo, Alex Elvis. 2019. *Ancient settlement patterns and land-use dynamics in rural Quiechapa, Oaxaca, Mexico*. University of Indiana.
- Balkansky, Andrew K. 2002. *The Sola Valley and the Monte Albán State: a study of Zapotec imperial expansion*. Ann Arbor: University of Michigan Museum of Anthropology.
- Campbell, Eric W. 2013. The Internal Diversification and Subgrouping Of Chatino. *International Journal of American Linguistics* 79(3). 395–420.
- Campbell, Eric W. 2014. *Aspects of the phonology and morphology of Zenzontepec Chatino, a Zapotecan language of Oaxaca, Mexico*. University of Texas, Austin. (doi:10.1109/FG.2013.6553775)
- Campbell, Lyle. 2017. Why is it so hard to define a linguistic area? In Hickey, Raymond (ed.), *Handbook of areal linguistics*, 19–39. Cambridge: Cambridge University Press.
- Cruz, Emiliana. 2011. *Phonology, tone and the functions of tone in San Juan Quiahije Chatino*. University of Texas, Austin.
- Feinman, Gary M. & Nicholas, Linda M. 2013. Settlement Patterns of the Ejutla Valley, Oaxaca, Mexico: A Diachronic Macroscale Perspective. *Fieldiana Anthropology* 43(1). 1–330. (doi:10.3158/0071-4739-43.00.1)
- Flannery, Kent & Joyce Marcus. 1994. *Zapotec civilization: how urban society evolved in Mexico's Oaxaca Valley*. London: Thames & Hudson.
- Joyce, Arthur A. 2010. *Mixtecs, Zapotecs, and Chatinos: ancient peoples of southern Mexico*. Oxford: Wiley-Blackwell.
- Joyce, Arthur A.; Workinger, Andrew G.; Hamann, Byron; Kroefges, Peter; Oland, Maxine; King, Stacie M. 2004. Lord 8 Deer "Jaguar Claw" and the land of the sky: the archaeology and history of Tututepec. *Latin American Antiquity* 15:3.
- Levine, Marc N. 2011. Negotiating political economy at Late Postclassic Tututepec (Yucu Dzaa), Oaxaca, Mexico. *American Anthropologist* 113(1). 22–39.
- Lind, Michael. 2015. *Ancient Zapotec religión: an ethnohistorical and archaeological perspective*. Boulder: University Press of Colorado.
- Markman, Charles W. 1981. *Prehistoric Settlement Dynamics in Central Oaxaca, Mexico. A View from the Miahuatlan Valley (Vanderbilt University Publications in Anthropology No. 26)*. Nashville: Vanderbilt University.
- Oudijk, Michel R. 2008. The postclassic period in the Valley of Oaxaca. In Blomster, Jeffrey P (ed.), *After Monte Albán: Transformation and Negotiation in Oaxaca, Mexico*, 95–118. Boulder: University Press of Colorado.
- Oudijk, Michel & Jansen, Maarten. 2000. Changing History in the Lienzos de Guevea and Santo Domingo Petapa. *Ethnohistory* 47(1). 281–331.
- Smith Stark, Thomas C. 2007. Algunas isoglosas zapotecas. In Buenrostro, Cristina & Herrera Castro, Samuel & Lastra, Yolanda & Nava, Fernando & Rendón, Juan José & Schumann, Otto & Valiñas, Leopoldo & Vargas Monroy, María Aydeé (eds.), *Clasificación de las lenguas indígenas de México: Memorias del III Coloquio Internacional de Lingüística Mauricio Swadesh*, 69–133. México, DF: Universidad Nacional Autónoma de México, Instituto de Investigaciones Antropológicas e Instituto Nacional de Lenguas Indígenas.
- Sullivan, John Ryan. 2015. *The Phonology and Inflectional Morphology of Chá?knyá, Tataltepec de Valdés Chatino, a Zapotecan Language*. University of Texas, Austin.
- Urcid, Javier. 1993. The Pacific Coast of Oaxaca and Guerrero: The westernmost extent of the Zapotec script. *Ancient Mesoamerica* 4. 141–165.